



**US Army Corps
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Construction Engineering
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Environmental Compliance Assessment System (ECAS)

South Carolina Supplement

U.S. Army

In response to the growing number of environmental laws and regulations worldwide, the U.S. Army has adopted an environmental compliance program that identifies compliance problems before they are cited as violations by the U.S. Environmental Protection Agency (USEPA).

Beginning in 1985, Major Army Commands (MACOMs) were required to conduct comprehensive environmental assessments at all installations on a 4-year cycle. The installations must also conduct a mid-cycle internal assessment. Because each MACOM was developing a separate assessment system, the Army mandated, through Army Regulation 200-1, one unified Army-wide assessment mechanism. The resulting system combines Federal, Department of Defense (DOD), and Army environmental regulations, along with good management practices and risk management information, into a series of checklists that show (1) legal requirements and (2) which specific items or operations to review. Each assessment protocol lists a point of contact to help assessors review the checklist items as effectively as possible.

The Environmental Compliance Assessment System (ECAS) manual incorporates existing checklists from USEPA and private industry. The South Carolina Supplement was developed to be used in conjunction with the U.S. ECAS manual, using existing South Carolina state environmental legislation and regulations as well as suggested management practices.



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FOREWORD

This work was performed for the U.S. Army Environmental Center (USAEC), under Military Interdepartmental Purchase Request (MIPR) number 1223, *Environmental Compliance Assessment System (ECAS)*, dated 5 August 1993. The USAEC technical monitor was Curt Williams, SFIM-AEC-ECC.

The research was performed by the Environmental Compliance Modeling and Systems Division (EC) of the Environmental Sustainment Laboratory (EL), U.S. Army Construction Engineering Research Laboratories (USACERL). The Principal Investigator was Carolyn O'Rourke, CECER-ECP. Lisa A. Gifford, CECER-ECP, was Associate Investigator. Dr. Diane K. Mann, CECER-ECP, is Acting Team Leader. Dr. John T. Bandy is Chief, CECER-EC, and William D. Goran is Chief, CECER-EL. LTC David J. Rehbein is Commander, USACERL, and Dr. L. R. Shaffer is Director.

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NOTICE

This manual is intended as general guidance for personnel at certain U.S. Army installations. It is not, nor is it intended to be, a complete treatise on environmental laws and regulations. Neither the U.S. Government nor any agency thereof, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information contained herein. For any specific questions about, or interpretations of, the legal references herein, consult appropriate legal counsel.

SOUTH CAROLINA SUPPLEMENT

This South Carolina Supplement contains the protocols necessary for determining compliance with South Carolina environmental rules and regulations. This manual is a supplement to the U.S. ECAS Manual; it does not replace it.

The following South Carolina agencies have responsibility in the areas indicated:

- Health and Environmental Control Department has several specific program offices, they are:

Air Quality Control Bureau - the state has full authority to manage all Federal air programs.

Water Supply and Special Programs Bureau - oversees the state's drinking water programs.

Water Pollution Control Bureau - the state has full authority to manage the Federal Pollutant Discharge Elimination System permit program. This Bureau manages the surface and groundwater programs. The Groundwater Protection Division administers underground storage tanks.

Solid and Hazardous Waste Management Bureau - administers the solid waste, hazardous waste, and infectious waste management programs.

- Emergency Response Commission (Division of Public Safety Programs) - accidental spills reported under the *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)* are reported to (803) 734-0428; any spill is reported to (803) 253-6488.
- Fertilizer and Pesticide Control Department (Clemson University, College of Agriculture Sciences) - oversees the state's pesticide management program.
- Historic Preservation Division (South Carolina Department of Archives and History) - oversees historic and archeological preservation program.
- South Carolina Coastal Council - oversees the state's coastal zone management program. The council may review all state and Federal permit applications in the critical coastal counties (Beaufort, Jasper, Colleton, Berkeley, Charleston, Dorchester, Horry, and Georgetown).
- Water Resources Commission - oversees the management of the state's oil and gas exploration program and Class II underground injection wells.
- Wildlife and Marine Resources Department - oversees the endangered species program.

METRIC CONVERSION TABLE

The following conversion table may be used throughout this manual to convert the measures stated in U.S. units to their approximate metric equivalents.

1 in.	=	25.4 mm
1 ft	=	0.3048 m
1 kip	=	4448 N
1 psi	=	6.89 kPa
1 psi	=	89.300 g/cm ²
1 lb	=	0.453 kg
1 lb/h	=	0.126 g/s
1 cu ft	=	0.028 m ³
1 mi	=	1.61 km
1 ft ²	=	0.093 m ²
1 gal	=	3.78 L
°F	=	(°C + 17.78) x 1.8
°C	=	0.55 (°F - 32)
1 yd	=	0.9144 m
1 Btu/lb	=	0.556 cal/g

Glossary of Acronyms

Acronym	Definition
ASA	Air Stagnation Advisory
AST	Aboveground storage tank
ASTM	American Society for Testing and Materials
BACT	Best available control technology
BAQC	Bureau of Air Quality Control
BAT	Best available technology
BOD	Biological oxygen demand
Btu	British thermal units
CAA	Clean Air Act
CAS	Chemical Abstract Service
C.E.	Combustion efficiency
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
CLSC	Code of Laws of South Carolina
CWA	Clean Water Act
DBCP	1,2-Dibromo-3-chloropropane
DHEC	South Carolina Department of Health and Environmental Control
DOD	Department of Defense
DOT	Department of Transportation
ECAS	Environmental Compliance Assessment System
EDB	Ethylene Dibromide
EPM	Environmental Program Management
FAA	Federal Aviation Administration
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
HID	High intensity discharge
HPC	Heterotrophic plate count
MBtu	Million British thermal units
MCL	Maximum Contamination Level
MCLG	Maximum Contamination Level Goal
MF	Membrane filter
MPN	Most Probable Number
MSWL	Municipal solid waste landfill
MTF	Multiple tube fermentation
MTP	Maximum Total Trihalomethane Potential
NACE	National Association of Corrosion Engineers
NEPA	National Environmental Policy Act
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NPR	NPDES Permits, Regulation 61-9
NT	Natural (Trout waters)
ORW	Outstanding Resource Waters
OSHA	Occupational Safety and Health Administration
P-A	Presence-absence
PCB	Polychlorinated biphenyls

(continued)

Glossary of Acronyms (continued)

Acronym	Definition
PFRP	Process to Further Reduce Pathogens
POE	Point of Entry Treatment Device
POU	Point of Use Treatment Device
PSD	Prevention of Significant Deterioration
PSRP	Process to Significantly Reduce Pathogens
RCRA	Resource Conservation and Recovery Act
RCRA-C	Resource Conservation and Recovery Act, Subtitle C
RCRA-D	Resource Conservation and Recovery Act, Subtitle D
RCRA-I	Resource Conservation and Recovery Act, Subtitle I
Rfc	Verified reference concentration
RR	Rules and Regulations for the Enforcement of the South Carolina Pesticide Control Act
SARA	Superfund Amendment and Reauthorization Act
SC	South Carolina
SCAPCR	South Carolina Air Pollution Control Regulation
SCCC	South Carolina Coastal Council
SCHWR	South Carolina Hazardous Waste Regulations
SCWSR	South Carolina Well Standards and Regulations
SDWA	Safe Drinking Water Act
SFH	Shellfish Harvesting Waters
SLI	Start lighting ignition
SMCL	Secondary Maximum Contaminant Level
THM	Trihalomethanes
TNTC	Too Numerous to Count
TPGT	Put, Grow, and Take (Trout waters)
TSCA	Toxic Substance Control Act
TSDF	Treatment, storage and disposal facility
TSP	Total Suspended Particulate
TTHM	Total Trihalomethanes
UICR	Underground Injection Control
USACE	U. S. Army Corps of Engineers
USDW	Underground Source of Drinking Water
USEPA	U. S. Environmental Protection Agency
UST	Underground storage tank
VOC	Volatile organic compound
WCS	Water Classifications and Standards
WRC	Water Resources Commission

Abbreviations

C	Celsius	mgd	million gallons per day
cm	centimeter	μg	microgram
cm ²	square centimeter	μm	micrometer
F	Fahrenheit	min	minute
ft	feet	mo	month
ft ²	square feet	mm	millimeter
ft ³	cubic feet	mm Hg	millimeters of Mercury
g	gram	mrem	millirem
gal	gallons	MW	MegaWatt
gpd	gallons per day	NTU	Nephelometric Turbidity Unit
gpm	gallons per minute	pCi	picoCurie
gr	grain	ppm	parts per million
gr/dscf	grain/dry standard cubic foot	ppmv	parts per million by volume
h	hour	psi	pounds per square inch
in.	inch	psia	pounds per square inch absolute
J	Joule	psig	pounds per square inch gauge
kg	kilogram	qt	quart
kPa	kiloPascal	s	second
kW	kiloWatt	V	volt
L	liter		
lb	pound		
m	meter		
m ²	square meter		
m ³	cubic meter		
mi	mile		
mg	milligram		

Chemicals

CO	Carbon Monoxide
CO ₂	Carbon Dioxide
NO ₂	Nitrogen Dioxide
O ₃	Ozone
SO ₂	Sulfur Dioxide



SECTION 1

CLEAN AIR ACT (CAA)

South Carolina Supplement

SECTION 1

CLEAN AIR ACT (CAA) South Carolina Supplement

Definitions

These definitions were obtained from the South Carolina Department of Health and Environmental Control (DHEC), Air Pollution Control Regulations (SCAPCR): SCAPCR 62.1(I), SCAPCR 62.3(I), SCAPCR 62.4(A), SCAPCR 62.5(5)(I)(A and D).

- *Acid Mist* - mist or droplets of sulfuric or other acids. Sulfuric acid mist includes sulfur trioxide and sulfuric acid vapor as well as liquid mist.
- *Add* - additions to a process which will increase size, scope, or emissions from a process.
- *Afterburner* - an auxiliary burner for destroying unburned or partially burned combustion gases after they have passed from the combustion chamber.
- *Air Curtain Incinerator* - a lined or unlined pit for combusting land clearing waste and/or nontreated or unfinished woodwaste utilizing a high velocity air curtain for limiting emissions.
- *Air Dried Coatings* - coatings that are dried by the use of air temperatures up to 90 °C (194 °F).
- *Air Pollution Episode* - exists whenever the Commissioner of the DHEC determines that the accumulation of air pollutants in any place is attaining or has attained levels that could, if such levels are sustained or exceeded, lead to substantial threat to the health of persons.
- *Alert of Pollution Episode* - this level indicates that air quality is continuing to deteriorate and that additional control actions are necessary. An alert is declared when monitoring indicates that one of the following pollutant concentrations has been reached, and when meteorological conditions are such that pollutant concentrations can be expected to remain at the above levels for 12 h or more, or increase, or in the case of ozone, the situation is likely to recur within the next 24 h unless control actions are taken:
 1. particulate material 10 µm or smaller in diameter (PM₁₀) - 420 µg/m³, 24-h average
 2. sulfur dioxide (SO₂) - 800 µg/m³ (0.3 ppm), 24-h average
 3. ozone (O₃) - 800 µg/m³ (0.4 ppm), 1-h average.
- *Alter* - modification or change in a process or processes that would affect emissions to the atmosphere.
- *Ambient Air Quality Standards* - that standard for the quality of ambient air at or beyond a property line on which a source of pollution is emitting.
- *Bead Dipping* - the dipping of an assembled tire bead into a solvent based cement.
- *Board* - the Board of Health and Environmental Control.

- **Boiler** - an enclosed device using controlled flame combustion and having specific characteristics including the following:
 1. The combustion chamber and primary energy recovery section must be of integral design (i.e., waste heat recovery boilers attached to incinerators are not boilers).
 2. At least 75 percent of recovered energy must be *exported* (i.e., not used for internal uses like pre-heating of combustion air or fuel, or driving combustion air fans or feedwater pumps).
- **Bulk Gasoline Terminal** - a gasoline storage plant that receives gasoline from refineries primarily by pipeline, ship, or barge, and delivers gasoline to bulk plants or to commercial or retail accounts primarily by tank truck, and has a daily throughput of more than 20,000 gal of gasoline.
- **Capture System** - the equipment (including hoods, ducts, fans, etc.) used to contain, capture, or transport a pollutant to a control device.
- **Chemotherapeutic Waste** - all waste resulting from the production or use of antineoplastic agents used for the purpose of stopping or reversing the growth of malignant cells. Chemotherapeutic waste does not include any waste listed in South Carolina Hazardous Waste Management Regulation R. 61-79.261.
- **Clear Coat** - a coating that lacks color and opacity or is transparent and uses the undercoat as a reflectant base of undertone color.
- **Cold Cleaner** - the batch process of cleaning and removing soils from metal surfaces by spraying, brushing, flushing, or immersion while maintaining the solvent below its boiling point. Wipe cleaning is not included in this definition.
- **Commissioner** - the Commissioner of the DHEC.
- **Condenser** - a device that cools a gas stream to a temperature that removes specific organic compounds by condensation.
- **Construction** - onsite fabrication, erection, or installation of an emission source, air pollution control equipment, or a plant.
- **Continuous Program of Physical Onsite Construction** - significant and continuous site preparation work such as major clearing or excavation followed by placement of footings, pilings, and other materials of construction, assembly, or installation of unique facilities or equipment at the site of the source. With respect to a change in the method of operating, this term refers to those onsite activities other than preparatory activities that mark the initiation of the change.
- **Control Device** - equipment used to destroy, contain, or remove air pollutants prior to discharge.
- **Control System** - any number of control devices and associated equipment designed and operated to reduce the quantity of volatile organic compounds (VOCs) emitted.
- **Conveyorized Degreasing** - the continuous process of cleaning metal surfaces by using either cold or vaporized solvents.
- **Crematory Incinerator** - any incinerator designed and used solely for the burning of human remains or animal remains.

- **Cutback Asphalt** - asphalt cement that has been liquefied by blending with petroleum solvents (dilutents).
- **Date of Notification** - as it refers to VOCs, the date that a source is notified in writing that it is subject to one of the VOC regulations.
- **Department** - the Department of Health and Environmental Control.
- **Emergency** - if this level is reached the most stringent control actions are necessary. An emergency is declared when monitoring indicates that one of the following pollutant concentrations has been reached, and when meteorological conditions are such that this condition can be expected to continue for 12 h or more, or increase, or in the case of ozone, the situation is likely to recur within the next 24 h unless control actions are taken:
 1. particulate material 10 μm or smaller in diameter (PM_{10}) - $500 \mu\text{g}/\text{m}^3$, 24-h average
 2. SO_2 - $1600 \mu\text{g}/\text{m}^3$ (0.6 ppm), 24-h average
 3. O_3 - $1000 \mu\text{g}/\text{m}^3$ (0.5 ppm), 1-h average.
- **Emission** - the release or discharge, directly or indirectly, of any air pollutant from any source.
- **Emission Limitation (and Emission Standard)** - a requirement established by the state or by the Administrator of the South Carolina Environmental Agency which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirements which limit the level of opacity, prescribe equipment, set fuel specifications, or prescribe operation or maintenance procedures for a source to assure continuous emission reduction.
- **External Floating Roof** - a storage tank cover in an open top tank that consists of a double deck or pontoon single deck that rests on and is supported by the petroleum liquid being contained and is equipped with a closure seal or seals to close the space between the roof and the tank shell.
- **Extreme Environmental Conditions** - constant exposure to the weather, exposure to temperatures consistently above 95°C (203°F), detergents, scouring, solvents, corrosive atmospheres, or similar environmental conditions.
- **Flexographic Printing** - the application of words, designs, and pictures to a substrate by means of a roll printing technique in which the pattern to be applied is raised above the printing roll and the image carrier is made of rubber or other rubber-like synthetic materials.
- **Forecast of Air Pollution Episode** - a level normally activated when an Air Stagnation Advisory (ASA) is issued for any part of South Carolina by the Columbia Forecast Office of the National Weather Service.
- **Freeboard Height** - the distance from the top of the vapor zone to the top of the degreaser tank.
- **Freeboard Ratio** - the freeboard height divided by the width of the degreaser.
- **Fuel Burning Operation** - use of furnace, boiler, device or mechanism used principally but not exclusively, to burn any fuel for the purpose of indirect heating in which the material being heated is not contacted by and adds no substance to the products of combustion.

- ***Fugitive Dust*** - a type of particulate emission that becomes airborne by forces of wind, man's activity, or both, including, but not limited to, construction sites, tilled land, materials storage piles, and materials handling.
- ***Fugitive Emissions*** - air contaminants which escape to the air not through an exhaust system but through other means, including but not limited to, windows, vents, doors, ill-fitting closures, or poorly maintained equipment.
- ***Garbage*** - animal and vegetable waste resulting from the handling, preparation, cooking, and serving of foods.
- ***Gasoline*** - a petroleum distillate that has a Reid vapor pressure of 4 psi or greater that is used as fuel for internal combustion engines.
- ***Gasoline Tank Truck*** - tank truck (or trailer equipped with a storage tank) used for the transport of gasoline to or from bulk gasoline terminals.
- ***Hazardous Air Pollutant*** - a pollutant which is the subject of National Emission Standards for Hazardous Air Pollutants promulgated by the U. S. Environmental Protection Agency (USEPA) by publication in the Federal Register.
- ***Hazardous Conditions (or Hazardous Levels)*** - conditions created by the release or discharge into the ambient air of one or more air contaminants which because of the characteristics and/or quantity of material involved may pose an imminent threat to the health of anyone who might come in contact with the material through this release as well as involving substantial risk of injury, to include the injury of to property or plant and animal life. This includes the indirect threat to human life and property by the creation of traffic hazards.
- ***Hazardous Waste*** - any waste identified as such by South Carolina Hazardous Waste Management Regulation 61-79.
- ***Hazardous Waste Fuel*** - hazardous waste that has a heat value greater than 5000 British thermal units per pound (Btu/lb) and is burned in an industrial or utility boiler or industrial furnace for energy recovery, except for exempted hazardous wastes.
- ***Hazardous Waste Incinerator*** - an incinerator whose primary function is to combust hazardous waste, except for exempted devices.
- ***Incinerator*** - any engineered device used in the process of controlled combustion of waste for the purpose of reducing the volume and/or hazardous potential of the waste charged by destroying combustible matter leaving the noncombustible ashes or residue and which meets neither the criteria nor classification as a boiler, nor is listed as an industrial furnace.
- ***In Existence*** - the owner or operator has obtained all necessary construction permits required and has either of the following:
 1. begun a continuous program of physical onsite construction of the source
 2. entered into binding agreements or contractual obligations, which cannot be cancelled or modified without substantial loss to the owner or operator, to undertake a program of construction of the source to be completed in a reasonable time, or that the owner or operator possesses a valid operating permit for the source prior to the effective date of a regulation or standard.

- ***Infectious Waste*** - any solid or liquid wastes that contains or is believed to contain pathogens with sufficient virulence and quantity that significant exposure to the waste by susceptible host could result in an infectious disease or its infectious characteristics may:
 1. cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating or reversible illness
 2. pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed (for specific kinds of infectious waste, see Appendix 1-1).
- ***Internal Floating Roof*** - a cover or roof in a fixed roof tank that rests on or is floated on the petroleum liquid being contained, and that is equipped with a closure seal or seals to close the space between the roof edge and the tank shell.
- ***Liquid-Mounted Seal*** - a primary seal mounted in continuous contact with the liquid between the tank wall and the floating roof around the circumference of the tank.
- ***Major Plant*** - except as otherwise provided, this term refers to any plant that directly emits, or has the potential to emit, 100 tons/yr or more of any regulated air pollutant.
- ***Mass Emission Rate*** - the mass of pollutant discharged per unit of time.
- ***Medical Waste*** - wastes generated in any hospital or any health care facility or any pathological wastes (except for human and animal remains burned in a crematory incinerator), chemotherapeutic wastes, or infectious wastes generated in any facility except private residences.
- ***Medical Waste Incinerator*** - an incinerator designed and operated to burn medical waste.
- ***Medical Waste Incinerator Facility*** - any combination of medical waste incinerators located on one or more contiguous or adjacent properties and owned or operated by the same person or by persons under common control.
- ***Multiple-Chamber Incinerator*** - an incinerator consisting of at least two refractory lined combustion chambers (primary and secondary) in series, physically separated by refractory walls, interconnected by gas passage ports or ducts.
- ***Municipal Waste*** - wastes collected by a public or private hauler from more than one waste generator, but excluding industrial types 5 and 6, material approved for an air curtain incinerator, medical, sewage sludge, radioactive contaminated, and hazardous wastes.
- ***Nonattainment County*** - a county that is determined by the DHEC to exceed any National Ambient Air Quality Standard.
- ***Nondesignated County*** - any county that has neither been exempted nor listed as a nonattainment county.
- ***Opacity*** - the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

- **Open Burning** - any fire or smoke-producing process that is not conducted in any boiler plant, furnace, high temperature process unit, incinerator or flare, or in any other such equipment primarily designed for the combustion of fuel or waste material.
- **Open Top Vapor Degreasing** - the batch process of cleaning metal surfaces by condensing hot solvent vapor on the colder metal parts.
- **Organic Material** - a chemical compound of carbon, excluding carbon monoxide (CO), carbon dioxide (CO₂), carbonic acid, metallic carbides or carbonates, and ammonium carbonate.
- **Overall Emission Reduction Efficiency** - the weight (per unit of time) of VOCs removed by a control device divided by the weight (per identical unit of time) of VOC emissions generated by a source, expressed as a percentage.
- **PM₁₀** - particulate matter with an aerodynamic diameter less than or equal to a nominal 10 µm.
- **PM₁₀ Emissions** - finely divided solid or liquid material with an aerodynamic diameter less than or equal to a nominal 10 µm emitted to the ambient air as measured by a reference method approved by the DHEC, with concurrence of the USEPA.
- **Packaging Rotogravure Printing** - rotogravure printing upon paper, paper board, metal foil, plastic film, and other substrates, that are, in subsequent operations, formed into containers and/or labels for articles to be sold.
- **Particulate Matter** - any material, except uncombined water, that exists in a finely divided form as a liquid or solid at standard conditions.
- **Particulate Matter Emissions** - all finely divided solid or liquid material, other than uncombined water, emitted to the ambient air.
- **Petroleum Liquids** - petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery but does not mean Number 2 through Number 6 fuel oils as specified in American Society for Testing and Materials (ASTM) D396-80, gas turbine fuel oils Numbers 2-GT through 4-GT as specified in ASTM D2880-82, or diesel fuel oils Numbers 2-D and 4-D as specified in ASTM D975-82.
- **Plant** - except as otherwise provided, any stationary source or combination of stationary sources, which is located on one or more contiguous or adjacent properties and owned or operated by the same person(s) under common control.
- **Potential To Emit** - the maximum capacity of a plant to emit a regulated pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the plant to emit a regulated pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed is treated as part of its design only if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions do not count in determining the potential of a plant to emit.
- **Process Weight** - the total weight of all materials introduced into a source operation, including air and water where these materials become an integral part of the product, and solids used as fuels but excluding liquids and gases used solely as fuels.

- **Process Weight Rate** - a rate established as follows:

1. for continuous or long-run steady-state source operations, the total process weight for the entire period of continuous operation or for a typical portion thereof, divided by the number of hours of such period or portion thereof
2. for cyclical or batch unit operations, or unit processes, the total process weight for a period that covers a complete operation or an integral number of cycles, divided by the hours of actual process operation during such a period.

Where the nature of any process or operation or the design of any equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission applies.

- **Production Equipment Exhaust System** - a device for collecting and directing out of the work area VOC fugitive emissions from reactor openings, centrifuge openings, and other vessel openings for the purpose of protecting workers from excessive VOC exposure.
- **Publication Rotogravure Printing** - printing upon paper that is subsequently formed into books, magazines, catalogues, brochures, directories, newspaper supplements, or similar types of printed materials.
- **Reactor** - a vat or vessel, that may be jacketed to permit temperature control, designed to contain chemical reactions.
- **Refuse** - garbage, rubbish, and/or trade waste.
- **Roll Printing** - the application of words, designs, and pictures to a substrate by means of hard rubber or steel rolls, each with only partial coverage.
- **Rubbish** - solid wastes from residences and dwellings, commercial establishments, and institutions.
- **Salvage Operations** - any operation of a business, trade, or industry engaged in whole or in part in salvaging or reclaiming any product or material including, but not limited to, metals, chemicals, shipping containers, drums, or automobiles.
- **Secondary Emissions** - emissions that would occur as a result of the construction or operation of a major modification, but do not come from the major plant or major modification itself. Secondary emissions must be specific, well defined, and quantifiable and must impact the same general area as the plant or modification that causes the secondary emissions. Secondary emissions may include, but are not limited to:
 1. emissions from ships or trains moving to or from the new or modified plant
 2. emissions from any offsite support operation that would not otherwise be constructed or increase its emissions as a result of the construction or operation of the major plant or major modification.
- **Separation Operation** - a process that separates a mixture of compounds and solvents into two or more components. Specific mechanisms include extraction, centrifugation, filtration, and crystallization.
- **Sludge Incinerator** - an incinerator that combusts wastes containing more than 10 percent (dry weight basis) sewage produced by municipal or industrial sewage treatment plants.

- **Smoke** - small gasborne and airborne particles arising from a process of combustion in sufficient number to be observable by a person of normal vision under normal conditions.
- **Solid Fuel** - a fuel that is fired as a solid such as coal, lignite, and wood.
- **Solvent** - organic materials that are liquid at standard conditions and are used as dissolvers, viscosity reducers, or cleaning agents.
- **Solvent Metal Cleaning** - the process of cleaning soils from metal surfaces by cold cleaning or open top vapor degreasing or conveyORIZED degreasing.
- **Source** - see Stationary Source.
- **Specification Oil (or Spec. Oil)** - see Used Oil.
- **Stack** - any flue, conduit, chimney, or opening arranged to conduct an effluent into the open air.
- **Stack Height** - the vertical distance measured in feet between the point of discharge from the stack or chimney into the outdoor atmosphere and the elevation of the land thereunder.
- **Standard Conditions** - 760 mm Hg at 25 °C (77 °F).
- **Stationary Source** - any building, structure, installation, or process that emits or may emit an air pollutant subject to regulation by any nation or state. Use of the term source is to be construed to mean stationary source.
- **Substantial Loss** - generally, a loss that would equal or exceed 10 percent of the total initial project cost.
- **Termination of Air Pollution Episode** - once declared, any level reached by application of episode criteria for that level are in effect until the criteria for that level are no longer met. At such time, the next lower level is assumed.
- **Total Potential Emissions** - the maximum capacity of a plant or portion of a plant to emit a pollutant under its physical or operational design, in the absence of air pollution control equipment. Any physical or operational limitations that affect the capacity of the plant to emit a pollutant, including restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, is treated as part of its design if the limitation or the effect it would have on emissions is enforceable.
- **Total Suspended Particulate (TSP)** - particulate matter as measured by the method described in Appendix B, 40 CFR 50, 1 July 1987.
- **Trade Waste** - all solid, liquid, or gaseous material or rubbish resulting from construction, building operations, or the prosecution of any business, trade or industry including, but not limited to, plastic products, cartons, paint, grease, oil and other petroleum products, chemicals, and cinders.
- **Traffic Hazards** - impairment of visibility whenever the concentration of dust, fumes, condensed vapor, or any other substance is such that the horizontal visibility at or near ground level is reduced to 2400 ft or less.
- **True Vapor Pressure** - the equilibrium partial pressure exerted by a petroleum liquid.

- **Used Oil** - any oil that has been refined from used crude oil, and, as a result of such use, has been contaminated by physical or chemical impurities. Two types of used oil are defined as follows:
 1. **Specification Oil (or Spec. Oil)** - used oil that meets the following specifications:*
 - Arsenic - 5 ppm maximum
 - Cadmium - 2 ppm maximum
 - Chromium - 10 ppm maximum
 - Lead - 100 ppm maximum
 - Nickel - 120 ppm maximum
 - Total Halogens - 4000 ppm maximum**
 - flash point - 37.4 °C (100 °F) minimum

* This does not apply to used oil fuel mixed with a hazardous waste.

**Used oil containing more than 1000 ppm total halogens is presumed to be a hazardous waste. The burden of proof that this is not true rests with the user.
 2. **Nonspec. Oil (Offspec. Oil)** - used oil that does not meet the definition of specification oil.
- **Utility Boiler** - a boiler that produces steam, heated air, or other heated fluids for sale or for use in producing electric power for sale.
- **Vapor Collection System** - a vapor transport system that uses direct displacement by the gasoline being transferred to force vapors from the vessels being loaded into either a vessel being unloaded or a vapor control system or vapor holding tank.
- **Vapor Control System** - a system that prevents release to the atmosphere of at least 90 percent by weight of organic compounds in the vapors displaced from a vessel during transfer of gasoline.
- **Vapor-mounted Seal** - any primary seal mounted so there is an annular space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the tank wall, the liquid surface, and the floating roof.
- **Virgin Fuel** - unused solid, liquid, or gaseous commercial fuel. Also, wood chips or bark that have not been processed other than for size reduction.
- **Volatile Organic Compound (VOC)** - any organic compound that participates in atmospheric photochemical reactions or that is measured by a reference method (as specified in 40 CFR 60, as of 1 July 1990), an equivalent method, an alternative method, or which is determined by procedures specified under any subpart of 40 CFR 60. This includes compounds other than the following compounds:
 - methane
 - ethane
 - methyl chloroform (1,1,1-trichloroethane)
 - CFC-113 (trichlorotrifluoroethane) methylene chloride
 - CFC-11 (trichlorofluoromethane)
 - CFC-12 (dichlorodifluoromethane)
 - CFC-22 (chlorodifluoromethane)
 - CFC-115 (chloropentafluoroethane)
 - HCFC-123 (dichlorotrifluoroethane)
 - HCFC-124 (2-chloro-1,1,1,2-tetrafluoroethane)
 - HCFC-134a (tetrafluoroethane)
 - HCFC-141b (dichlorofluoroethane)

HCFC-125 (pentafluoroethane)
HFC-134 (1,1,2,2-tetrafluoroethane)
FC-23 (trifluoromethane)
CFC-114 (dichlorotetrafluoroethane)
HFC-143a (1,1,1-trifluoroethane)
HFC-152a (1,1-difluoroethane).

- **Waste** - used oil, hazardous waste fuel, hazardous waste, medical waste, waste fuel, and waste classification Types 0 through 6 (see Appendix 1-2).
- **Waste Fuel** - waste that does not meet hazardous waste criteria nor any other waste criteria but has a heat value greater than 5000 Btu/ lb.
- **Watch of Air Pollution Episodes** - the level activated when continuous air quality monitoring indicates that one of the following pollutant concentrations has been reached, and when meteorological conditions are such that this condition can be expected to continue for 12 h or more, or increase, or in the case of ozone, the situation is likely to recur within the next 24 h unless control actions are taken:
 1. particulate material 10 μm or smaller in diameter (PM_{10}) - 350 $\mu\text{g}/\text{m}^3$, 24-h average
 2. SO_2 - 400 $\mu\text{g}/\text{m}^3$ (0.15 ppm), 24-h average
 3. O_3 - 400 $\mu\text{g}/\text{m}^3$ (0.2 ppm), 1-h average.

CLEAN AIR ACT (CAA)
GUIDANCE FOR SOUTH CAROLINA CHECKLIST USERS

APPLICABILITY:	REFER TO CHECKLIST ITEMS:
Permit Requirements	1-1 through 1-5
Open Burning	1-6
Air Pollution Episodes	1-7
Hazardous Air Pollution Conditions	1-8 through 1-11
Control of Fugitive Particulate Matter	1-12 through 1-14
Emissions from Fuel Burning Operations	1-15 through 1-19
Waste Reduction - Incinerators	1-20
Municipal Waste Incinerators	1-21
Air Curtain Incinerators	1-22
Incinerator Operator Training	1-23
Medical Waste Incinerators	1-24 through 1-29
Volatile Organic Compounds (VOCs)	1-30
Graphic Arts	1-31
Solvent Metal Cleaning	1-32 through 1-34
Open-Top Vapor Degreasers	1-35
Conveyorized Degreasers	1-36
VOC - Petroleum Storage	1-37 through 1-42
VOC - Cutback Asphalt	1-43
VOC - Bulk Gasoline Storage	1-44 and 1-45
Ambient Air Quality Standards	1-46
Toxic Air Pollutants	1-47

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>PERMIT REQUIREMENTS</p> <p>1-1. Installations are exempt from obtaining permits for specific sources of air contaminants (SCAPCR 62.1 (II)(F)).</p> <p>1-2. Installations must have construction and operating permits for sources of air contaminants and for devices to control air contaminant discharges (SCAPCR 62.1(II)(A) and (B)).</p> <p>1-3. Installations must meet specific reporting requirements for sources not required to have continuous emission monitors (SCAPCR 62.1 (II)(C)(3)).</p> <p>1-4. Installations must meet specific requirements whenever the ownership/operation of a source is transferred (SCAPCR 62.1(II)(E)).</p>	<p>Determine whether the installation has constructed or operates any of the sources exempt from permit requirements (see Appendix 1-3).</p> <p>Verify that the installation has obtained permits from the Department to construct, alter, or add to any sources of air contaminants, including air contaminant control devices.</p> <p>Verify that the installation has requested operating permits from the Department for any new, increased, or altered source no later than 15 days prior to the commencement of operation.</p> <p>Verify that, for a source not required to have continuous emission monitors, the installation reports to the Department any equipment failure that results in discharges of air contaminants, for a duration of 1 h or more, that exceed the limits of the source's permit.</p> <p>Verify that the initial report is given to the Department within 24 h of the equipment failure.</p> <p>Verify that a written report is submitted to the Department within 30 days of the equipment failure.</p> <p>Determine whether the installation has become the new owner/operator of a source of air contaminants.</p> <p>Verify that the installation has notified the Department of this transaction within 30 days of the transaction.</p>

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>1-5. Installations must inventory emissions from all major sources of air contaminants (SCAPCR 62.1(III)).</p>	<p>Verify that the installation inventories the emissions from all major sources of air contaminants on an annual basis.</p> <p>Verify that the inventory includes at least the following information:</p> <ul style="list-style-type: none"> - information on fuel burning equipment - types and quantities of fuel used - fuel analysis - exhaust parameters - control equipment information - raw process materials and quantities used - design and normal process rates - hours of operation - significant emission generating points or processes - any desired information listed in 40 CFR 51, Appendix E (1 July 1986). <p>Verify that the emissions inventory is completed by the installation for the previous calendar year and submitted to the Department by 31 March.</p>
<p>OPEN BURNING</p> <p>1-6. Installations must not allow open burning (SCAPCR 62.2).</p>	<p>Determine if the installation engages in any exempted kinds of open burning (see Appendix 1-4).</p> <p>Verify that the installation does not allow open burning.</p>
<p>AIR POLLUTION EPISODES</p> <p>1-7. Installations must meet specific emission reduction requirements during air pollution episodes (SCAPCR 62.4 (II)).</p>	<p>Verify that the installation has submitted plans for meeting the required reductions of pollutants for which the county is in nonattainment to the Department.</p> <p>Verify that the plans identify the following:</p> <ul style="list-style-type: none"> - the air pollutant source - the approximate amount of reduction of pollutants - a brief description of the manner in which the reduction is achieved during each level of an air pollution episode.

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>HAZARDOUS AIR POLLUTION CONDITIONS</p> <p>1-8. Installations must meet general requirements for hazardous air pollution conditions (SCAPCR 62.4(B)).</p> <p>1-9. Installations must meet specific requirements for traffic hazards (SCAPCR 62.4(B)).</p> <p>1-10. Installations must meet specific requirements for emergency actions (SCAPCR 62.4 (D)).</p> <p>1-11. Installations must meet the requirements for cleanup of spillage that has contributed to air contamination (SCAPCR 62.4(E)).</p>	<p>Verify that the installation, in addition to meeting all applicable regulations and standards, takes all steps necessary to protect human health and welfare and otherwise minimize the effects of unintended, short-term, or other releases of air contaminants and other substances that produce unintended hazardous conditions.</p> <p>Verify that the installation does not allow the emission of the following, which create a traffic hazard on public roads, by impairment of visibility or intensify an existing condition to the extent that a traffic hazard is created:</p> <ul style="list-style-type: none"> - smoke - dust - fumes - condensed vapor - other substances. <p>Determine if the installation creates imminently hazardous levels of air pollution by the release of dust, fumes, smoke, gases, mists, vapors, or other substances.</p> <p>Verify that the installation meets the following requirements:</p> <ul style="list-style-type: none"> - takes all necessary emergency acts to cause the release to cease - notifies nearby residents and occupants of the hazardous levels - assists in evacuation, if necessary - immediately notifies the Department of the hazardous levels. <p>Verify that the installation begins cleanup as soon as possible after any spill.</p> <p>Verify that cleanup is completed to the satisfaction of the Commissioner.</p>

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>CONTROL OF FUGITIVE PARTICULATE MATTER</p> <p>1-12. Installations must meet specific requirements to control fugitive particulate matter in non-attainment areas (SCAPCR 62.6).</p>	<p>Verify that the installation does not allow any fugitive particulate matter to go beyond property boundaries below a height of 150 ft.</p> <p>Verify that the installation uses at least the following means to control fugitive particulate matter:</p> <ul style="list-style-type: none"> - where possible, water or chemicals for the control of dust in demolition or construction operations, the grading of roads, or the clearing of land - application of asphalt, water, or suitable chemicals on dirt roads, material stock-piles, and other surfaces that can give rise to airborne dust - hoods, scrubbers, fabric filters, or other dust cleaning devices, where feasible and effective, to capture and contain fugitive particulate matter while handling dusty materials - adequate containment methods during sandblasting and similar operations - paving of roadways and the prompt removal of earth or other materials from paved streets that have been deposited by vehicular traffic, earth moving equipment, water erosion or other means - stabilization of long-term storage piles by vegetation or appropriate chemicals and reclamation of mined areas - modifying the process or materials handling system - slurry to move material if feasible - traveling booms, telescopic chutes, rotary stackers, and adequate shrouding of openings in containers to be filled - avoidance of front-end loading in the handling of dry, dusty materials - imposition of strict slow speed limits for vehicular traffic on the installation or construction/destruction sites - ensuring proper loading of trucks, trailers, front-end loaders, etc., to prevent spillage on paved roadways. <p>(NOTE: The term appropriate is not defined in the South Carolina regulation.)</p> <p>(NOTE: Cutback asphalt is prohibited.)</p> <p>(NOTE: The term proper is not defined in the South Carolina regulation.)</p> <p>Verify that the installation does not allow visible dust in excess of 10 percent opacity to emit from transfer points of any conveyor system for material or finished product.</p> <p>(NOTE: If this is not feasible, its nonfeasibility must be demonstrated satisfactorily to the Department.)</p>

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>1-13. Installations must meet specific requirements to control fugitive particulate matter in problem areas (SCAPCR 62.6).</p>	<p>(NOTE: In this section, <i>problem areas</i> refer to areas in which ambient levels of particulate matter are at or near primary standards, an undesirable level of air pollution exists, excessive levels of fugitive particulate matter result in complaints from the general public, and fugitive particulate matter is determined to be having an impact upon a nonattainment area.)</p> <p>Verify that the installation does not emit fugitive particulate matter that can be reasonably controlled to escape into the ambient air.</p> <p>Verify that the installation meets the requirements for the control of fugitive particulate matter in nonattainment areas.</p> <p>Verify that dust-generating processes are enclosed to prevent fugitive emissions and dust.</p> <p>Verify that the installation modifies or reduces the handling of materials to minimize the generation of dust.</p>
<p>1-14. Installations must meet specific requirements to control fugitive particulate matter statewide (SCAPCR 62.6).</p> <p>EMISSIONS FROM FUEL BURNING OPERATIONS</p> <p>1-15. Installations must meet specific requirements for existing fuel burning operations of visible emissions (SCAPCR 62.5(1)(I)(A and C)).</p>	<p>Verify that the installation controls fugitive particulate matter in a manner and to the degree that it does not create an undesirable level of air pollution.</p> <p>Verify that the installation does not use any method of material handling that generates fugitive particulate matter not fully described in a source's permit application.</p> <p>Verify that VOCs are not used for dust control.</p> <p>Verify that oil treatment is not used for dust control.</p> <p>(NOTE: Existing sources are those constructed prior to 11 February 1971.)</p> <p>Verify that the installation does not emit from an existing source smoke that exceeds an opacity of 40 percent.</p> <p>(NOTE: This opacity standard does not apply during startup or shutdown. Also, for a total of 6 min in 1 h, or 24 min in a 24-h period, 40 percent opacity may be exceeded for soot blowing, but it must not exceed an opacity of 60 percent.)</p> <p>Verify that the installation maintains and operates any existing source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.</p>

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
1-15. (continued)	<p>Verify that the installation maintains a log of the time, magnitude, duration, and any other pertinent information to determine periods of startup and shutdown of existing sources.</p> <p>(NOTE: New sources are those constructed after 11 February 1971.)</p> <p>Verify that the installation does not emit from a new source smoke that exceeds an opacity of 20 percent.</p> <p>(NOTE: This opacity standard does not apply during startup or shutdown. Also, for a total of 6 min in 1 h, or 24 min in a 24-h period, 20 percent opacity may be exceeded for soot blowing, but it must not exceed an opacity of 60 percent.)</p> <p>Verify that the installation maintains and operates any new source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.</p> <p>Verify that the installation maintains a log of the time, magnitude, duration, and any other pertinent information to document periods of startup and shutdown of new sources.</p>
1-17. Installations must meet specific requirements for particulate matter emitted from fuel burning operations (SCAPCR 62.5 (1)(II)).	<p>Verify that the installation does not exceed the limits for particulate matter (see Appendix 1-5).</p>
1-18. Installations must meet specific requirements for SO₂ emitted from fuel burning operations (SCAPCR 62.5(1)(III)).	<p>Verify that the installation does not exceed the limits for SO₂, according to the class in which it is located (see Appendix 1-6).</p>

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>1-19. Installations must meet specific requirements for monitoring of SO₂ emitted from fuel burning operations (SCAPCR 62.5 (1)(IV)).</p>	<p>Determine if the installation operates any fossil fuel fired steam generators of more than 250 MBtu/h heat input capacity.</p> <p>Determine if the installation operates any of the following kinds of fossil fuel fired steam generators of more than 250 MBtu/h heat input capacity, which are exempt from these requirements:</p> <ul style="list-style-type: none"> - those in which gaseous fuel is the only fuel burned - those in which oil or a mixture of oil and gas are the only fuels burned and meet the requirements for visible and particulate matter emissions - those whose steam generator operates with an annual average capacity factor of 30 percent or less, as reported to the Federal Power Commission for calendar year 1974, or otherwise adequately demonstrated to the Department and has not subsequently increased this factor to more than 30 percent. <p>Verify that the installation has installed and calibrated, operates, and maintains continuous monitoring systems for fossil fuel fired generators of more than 250 MBtu/h heat input capacity.</p> <p>Determine if the installation operates any woodwaste boiler, not equipped with a wet scrubber, that meets one of the following criteria:</p> <ul style="list-style-type: none"> - it is of at least 100 by 10⁶ Btu/h rated heat input - regardless of size, it has been operating in noncompliance with any applicable state air pollution control regulations and standards. <p>Verify that the installation has installed and calibrated, operates, and maintains a continuous monitoring system for woodwaste boilers of these specifications.</p> <p>(NOTE: If a boiler is fired on more than one fuel, the total capacity determines the applicability of the requirements for SO₂ emitted from fuel burning operations.)</p>

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
WASTE REDUCTION - INCINERATORS 1-20. Installations must meet specific requirements for waste combustion and reduction operations (SCAPCR 62.5(3)(I and III)).	<p>(NOTE: These requirements apply to any source, regardless of type or construction date, that burns a fuel other than virgin fuel for any purpose.)</p> <p>Determine whether the installation operates any equipment that meets all of the following conditions, which are exempt from these requirements:</p> <ul style="list-style-type: none"> - the equipment is heater engineered to burn used oil - the used oil is generated onsite or originates from do-it-yourself oil changes - burners are rated at no more than 0.5 by 10⁶ Btu/h heat input - the exhaust is vented to the ambient air. <p>(NOTE: Exempt equipment requires no construction or operating permits.)</p> <p>Verify that the installation does not allow the opacity of emissions from sources with limits established by the Department on a case-by-case, to exceed established limits.</p> <p>Retail Business Incinerators</p> <p>Verify that the installation does not allow the opacity of emissions from retail business incinerators to exceed 20 percent.</p> <p>Crematory Incinerators</p> <p>Verify that the installation does not allow the opacity of emissions from crematory incinerators to exceed 10 percent.</p> <p>Sludge Incinerators</p> <p>Verify that the installation meets the following requirements for sludge incinerators:</p> <ul style="list-style-type: none"> - opacity does not exceed 20 percent - particulate matter emissions do not exceed 1.3 lb/ton of dry sludge - mercury emissions do not exceed 3200 g/day. <p>Hazardous Waste Incinerators</p> <p>Verify that the installation meets the following requirements for emissions from hazardous waste incinerators:</p> <ul style="list-style-type: none"> - opacity does not exceed 10 percent - hydrochloric acid emissions do not exceed 4 lb/h - particulate matter emissions do not exceed 0.08 gr/dscf corrected to 7 percent oxygen (O₂) - other emissions do not exceed specified limits (see Appendix 1-7)

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>1-20. (continued)</p>	<ul style="list-style-type: none"> - all hazardous organic compounds are destroyed with an efficiency of at least 99.99 percent - dioxin containing wastes are destroyed with an efficiency of at least 99.9999 percent. <p>(NOTE: Hydrochloric acid emissions may exceed 4 lb/h only if they are controlled with an efficiency of at least 99 percent.)</p> <p>Industrial Incinerators</p> <p>Verify that the installation meets the following requirements for industrial incinerators:</p> <ul style="list-style-type: none"> - opacity does not exceed 20 percent - particulate matter emissions do not exceed 0.5 lb/10⁶ Btu heat input excluding auxiliary fuel. <p>Nonindustrial Boilers</p> <p>Verify that, regardless of size, nonindustrial boilers use only virgin fuels and/or spec. oil.</p> <p>Nonindustrial Furnaces</p> <p>Verify that, regardless of size, nonindustrial furnaces use only virgin fuels and/or spec. oil.</p> <p>(NOTE: When a source engages in activities that can be construed as being in more than one classification, the more restrictive requirements apply.)</p>
<p>MUNICIPAL WASTE INCINERATORS</p> <p>1-21. Installations must meet specific requirements for municipal waste incinerators (SCAPCR 62.5 (3)(I and III)).</p>	<p>Verify that the installation meets the following requirements for municipal waste incinerators:</p> <ul style="list-style-type: none"> - opacity does not exceed 20 percent - particulate matter emissions do not exceed 0.08 gr/dscf corrected to 12 percent CO₂ for existing sources, and the best available control technology (BACT) for new sources - CO emissions do not exceed 100 ppmv, hourly average, corrected to 7 percent O₂ on a dry basis - either hydrochloric acid emissions do not exceed 30 ppmv, hourly average corrected to 7 percent O₂ on a dry basis, or emission controls are installed that, on the date of the permit to construct, meet the criteria of BACT - combustion efficiency (C.E.) is at least 99.9 percent on an hourly basis

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>1-21. (continued)</p>	<ul style="list-style-type: none"> - combustion gases are maintained at a temperature greater than 1800 °F for at least 2 s - automatically controlled auxiliary fuel burners are installed and in working order - 1800 °F is reached before the introduction of waste into the incinerator - a thermocouple is appropriately located to confirm the temperature - the auxiliary (i.e., secondary and/or tertiary) burners are designed so, without the aid of the heat content of the waste, a minimum of 2000 °F can be maintained for at least 2 s - the firing of the burners and the combustion air is modulated automatically to maintain a secondary chamber exit temperature of at least 1800 °F - large, bulky noncombustibles (e.g., water heaters, refrigerators) and difficult to burn, bulky combustible materials (e.g., mattresses, sofas) are not burned in the incinerator - the tipping area is totally enclosed and operated at a negative pressure to prevent the escape of malodors - the air is used as primary combustion air in the incinerator - municipal waste and ash are not stored openly - ash is loaded in an enclosed area or handled wet in enclosed containers - an automatic loader is used and equipped with interlocks. <p>(NOTE: Existing sources are those that were in operation before or on 25 May 1990; new sources are those that were constructed, altered, added to, or in operation after 25 May 1990.)</p> <p>Verify that, for municipal waste incinerators, the charging of waste to an incinerator automatically ceases through the use of an interlock system if the following occur:</p> <ul style="list-style-type: none"> - the incinerator temperature drops below 972.4 °C (1800 °F) for a 15-min period - the CO emissions are equal to or greater than 150 ppmv, corrected to 7 percent O₂ on a dry basis for a 15-min period - the flue gas oxygen level drops below 3 percent (wet basis) for a 15-min period - the opacity of the visible emissions is equal to or greater than 20 percent for a period of 15 min - the combustion efficiency drops below 99.5 percent for a 15-min period - the required monitoring equipment is not functioning. <p>(NOTE: The Department may alter the requirements for temperature, flue gas oxygen, and CO limits for units utilizing advanced combustion technologies or burning specially prepared municipal wastes.)</p>

[illegible]

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>1-22. (continued)</p>	<ul style="list-style-type: none"> - the air curtain is used at all times that the pit contains burning wood debris, except during start up to get the fire ignited - the incinerator is located to minimize the distance to business and residential areas and is located at least 500 ft from any business or residence near or adjacent to the installation - access roads and loader work areas are maintained so as to minimize fugitive emissions by the use of one or more of the following: water sprays, dust controlling chemicals other than VOCs, or other approved dust suppression systems - stacking rakes or similar devices are used on loader equipment when loaders are used to charge the pit in to minimize dirt on the material to be burned - changes in incinerator location have the prior written approval of the Bureau.
<p>INCINERATOR OPERATOR TRAINING</p> <p>1-23. Installations must meet operator training requirements for incinerator facilities (SCAPCR 62.5(3)(X) and 62.5 (3.1) (Xi)).</p>	<p>Verify that the installation, prior to startup of new facilities, trains all incinerator operators, either by a representative from the incinerator manufacturer or by another qualified person or organization.</p> <p>Verify that the content of the training is submitted to the Department for its approval.</p> <p>Verify that trainees submit a copy of a certificate that verifies the satisfactory completion of training.</p> <p>Verify that all medical waste incinerator operators have operating permits for the incinerators they operate.</p>
<p>MEDICAL WASTE INCINERATORS</p> <p>1-24. Installations are exempt from the requirements for specific medical-related sources of air pollution (SCAPCR 62.5(3.1)(I)).</p>	<p>(NOTE: These requirements apply to any incinerator, regardless of type or construction, that burns medical waste.)</p> <p>Determine if the installation operates any of the following medical-related sources, which are exempt from the requirements for medical waste incineration:</p> <ul style="list-style-type: none"> - crematory incinerators - incinerators located in any hospital/and or medical care facility that are used to incinerate only general refuse and not to incinerate infectious, hazardous, or chemotherapeutic wastes.

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>1-25. Installations must meet general requirements for medical waste incineration (SCAPCR 62.5(3.1)(I)(E) and 62.5 (3.1)(II)).</p>	<p>Determine if the installation operates any medical waste incinerators that are capable of burning medical wastes at rates greater than or equal to 50 tons/day.</p> <p>Verify that medical waste incinerators meet the permit requirements for municipal waste incineration and resource recovery facilities capable of burning municipal wastes at rates greater than or equal to 50 tons/day.</p> <p>Verify that the installation burns medical waste only in multiple-chamber incinerators with solid hearths or in devices found to be equally effective for the purpose of air contaminant control as an approved multiple-chamber incinerator as determined by the Bureau of Air Quality Control (BAQC).</p> <p>Verify that operating, startup, and shutdown procedures for medical waste incinerators are approved by the BAQC and posted onsite at or near the incinerators.</p> <p>Verify that inspection and maintenance schedules for incinerators are posted or kept onsite at or near the medical waste incinerators.</p> <p>Verify that the installation has a plan of action, approved by BAQC, that identifies the steps and procedures the operator should follow to avoid exceeding the emission limitations and specified operating conditions.</p> <p>Verify that this plan includes descriptions of startup and shutdown procedures as well as actions to be taken to correct nonstandard operating conditions and to train plant operators.</p>
<p>1-26. Installations must not exceed specific emissions limitations for existing medical waste incinerators that have a capacity of less than 500 lb/h (SCAPCR 62.5(3.1)(III)(A)).</p>	<p>(NOTE: Existing medical waste incinerators are those in existence before 25 May 1990.)</p> <p>Determine if the installation operates any existing medical waste incinerators with a capacity of less than 500 lb/h.</p> <p>Verify that particulate matter emissions do not exceed 0.15 gr/dscf of exhaust gas corrected to 7 percent O₂.</p> <p>Verify that the installation does not exceed the hydrogen chloride limits specified on the construction and/or operating permits.</p> <p>Verify that the installation does not discharge gases that exhibit greater than 10 percent opacity (6-min average) or equal to or greater than 30 percent at any time.</p> <p>(NOTE: This opacity standard does not apply to burner startups when only firing auxiliary fuel without waste being burned.)</p>

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>1-27. Installations must not exceed specific emissions limitations for existing medical waste incinerators that have a capacity of 500 to 1999 lb/h (SCAPCR 62.5(3.1)(III)(A)).</p>	<p>Determine if the installation operates any existing medical waste incinerators with a capacity of 500 to 1999 lb/h, inclusively.</p> <p>Verify that particulate matter emissions do not exceed 0.1 gr/dscf of exhaust gas corrected to 7 percent O₂ on a dry basis.</p> <p>Verify that CO emissions do not exceed 100 ppmv, hourly average, corrected to 7 percent O₂ on a dry basis.</p> <p>Verify that the installation does not exceed the hydrogen chloride limits specified on the construction and/or operating permits.</p> <p>Verify that the installation does not discharge gases that exhibit greater than 10 percent opacity (6-min average) or equal to or greater than 30 percent at any time.</p> <p>(NOTE: This opacity standard does not apply to burner startups when only firing auxiliary fuel without waste being burned.)</p>
<p>1-28. Installations must not exceed specific emissions limitations for existing medical waste incinerators that have a capacity of 2000 lb/h or greater (SCAPCR 62.5(3.1)(III)(A)).</p>	<p>Determine if the installation operates any existing medical waste incinerators with a capacity of 2000 lb/h or greater.</p> <p>Verify that particulate matter emissions do not exceed 0.08 gr/dscf of exhaust gas corrected to 7 percent O₂.</p> <p>Verify that CO emissions do not exceed 100 ppmv, hourly average, corrected to 7 percent O₂ on a dry basis.</p> <p>Verify that hydrochloric acid emissions do not exceed 30 ppmv, hourly average, corrected to 7 percent O₂ on a dry basis, or is reduced by 90 percent by weight on an hourly basis.</p> <p>Verify that the installation does not allow to be discharged into the atmosphere any gases that exhibit greater than 10 percent opacity (6-min average) or equal to or greater than 30 percent at any time.</p> <p>(NOTE: This opacity standard does not apply to burner startups when only firing auxiliary fuel without waste being burned.)</p> <p>Verify that combustion efficiency is at least 99.9 percent on an hourly basis.</p>
<p>1-29. Installations must not exceed specific limitations for new or modified medical waste incinerators (SCAPCR 62.5(3.1)(III)(B)).</p>	<p>(NOTE: New or modified medical waste incinerators are those for which construction has occurred since 25 May 1990.)</p> <p>Determine if the installation operates any new or modified medical waste incinerators with a capacity of less than 500 lb/h.</p> <p>Verify that particulate matter emissions do not exceed 0.1 gr/dscf of exhaust gas corrected to 7 percent oxygen.</p>

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
1-29. (continued)	<p>Verify that CO emissions do not exceed 100 ppmv, hourly average, corrected to 7 percent O₂ on a dry basis.</p> <p>Verify that hydrochloric acid emissions do not exceed 4 lb/h or are reduced by 90 percent by weight on an hourly basis.</p> <p>Verify that the installation does not allow to be discharged into the atmosphere from any affected facility any gases that exhibit greater than 10 percent opacity for a period or periods aggregating more than 6 min in any 1 h, or equal to or greater than 30 percent at any time.</p> <p>Determine whether the installation operates any new or modified medical waste incinerators with a capacity of 500 to 1999 lb/h inclusively.</p> <p>Verify that particulate matter emissions do not exceed 0.08 gr/dscf of exhaust gas corrected to 7 percent O₂.</p> <p>Verify that CO emissions do not exceed 100 ppmv, hourly average, corrected to 7 percent O₂ on a dry basis.</p> <p>Verify that hydrochloric acid emissions do not exceed 30 ppmv, hourly average, corrected to 7 percent on a dry basis or are reduced by 90 percent by weight on an hourly basis.</p> <p>Verify that the installation does not allow to be discharged into the atmosphere from any affected facility any gases that exhibit greater than 10 percent opacity for a period or periods aggregating more than 6 min in any 1 h, or equal to or greater than 30 percent at any time.</p> <p>Determine if the installation operates any new or modified medical waste incinerators with a capacity of 2000 lb/h or greater.</p> <p>Verify that particulate matter emissions do not exceed 0.03 gr/dscf of exhaust gas corrected to 7 percent O₂.</p> <p>Verify that CO emissions do not exceed 100 ppmv, hourly average, corrected to 7 percent O₂ on a dry basis.</p> <p>Verify that hydrochloric acid emissions do not exceed 30 ppmv, hourly average, corrected to 7 percent O₂ on a dry basis or are reduced by 90 percent by weight on an hourly basis.</p> <p>Verify that SO₂ emissions do not exceed 30 ppmv, hourly average, corrected to 7 percent O₂ on a dry basis or are reduced by 75 percent by weight on an 8-h basis.</p> <p>Verify that combustion efficiency is at least 99.9 percent on an hourly basis.</p>

COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
1-29. (continued) VOLATILE ORGANIC COMPOUNDS (VOCs) 1-30. Installations must meet general requirements for sources emitting VOCs (SCAPCR 62.5(5)(I)(B, C, and F)).	<p>Verify that the installation does not allow to be discharged into the atmosphere from any affected facility any gases that exhibit greater than 10 percent opacity for a period or periods aggregating more than 6 min in any 1 h, or equal to or greater than 30 percent at any time.</p> <p>(NOTE: Anderson, Bamberg, Barnwell, Chesterfield, Darlington, and Hampton counties are exempt from VOC source requirements.)</p> <p>Determine if the installation operates any of the following sources of VOCs that have a total potential emission of VOCs that exceed 550 lb in any one day (nominal size - 100 tons) or more than 150 lb in any 1 h:</p> <ul style="list-style-type: none"> - graphic arts such as rotogravure and flexography - petroleum liquid stored in fixed roof tanks - petroleum liquid stored in external floating roof tanks - cutback asphalt - bulk gasoline terminals and vapor collection systems. <p>Verify that the installation meets the VOC requirements for each of these kinds of sources.</p> <p>(NOTE: A facility with an existing source that is not required to be regulated due to the size of the source is subject to the specified requirements when the source increases emissions sufficiently to meet the applicability requirements regardless of the time frame. Conversely, a source subject to the specified requirements, but that decreases emissions sufficiently so the total potential emissions are below the specified limit may petition the Department for relief from the emissions limits.)</p> <p>Verify that, for any VOC source or control equipment, the installation maintains records that detail all activities related to any compliance schedule, testing, and monitoring.</p> <p>Verify that, for any VOC source or control equipment located in an ozone nonattainment area, the installation maintains daily records of operations.</p>

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

**REGULATORY
REQUIREMENTS:**

REVIEWER CHECKS:

GRAPHIC ARTS

1-31. Installations must meet specific requirements for VOCs emitted from graphic arts activities (SCAPCR 62.5(5) (II)(H)).

Determine if the installation engages in any of the following graphic arts activities:

- packaging rotogravure
- publication rotogravure
- flexographic printing.

Verify that the installation does not discharge any VOCs from graphic arts activities, unless the following conditions are met:

- the volatile fraction of waterborne inks, as applied to the substrate, contains 25 percent by volume or less of organic solvent and 75 percent by volume or more of water for heavy coverage
- the source achieves a 70 percent by volume overall reduction of solvent usage as compared to all solvent borne ink usage for light coverage
- the source prints with high solids ink that contains, less water, 60 percent by volume or more nonvolatile materials.

Verify that the installation uses the following methods of achieving emissions limitations for graphic arts activities:

- the application of low solvent content coating technology
- a carbon adsorption system
- incineration
- an alternative VOC emission reduction system
- a capture system that is used in conjunction with the control equipment systems
- alternative controls that are approved by the Department.

Verify that capture systems used in conjunction with the control equipment systems provide for an overall VOC emission reduction of at least the following:

- 75 percent where a publication rotogravure process is employed
- 65 percent where a packaging rotogravure process is employed
- 60 percent where a flexographic printing process is employed.

Verify that graphic arts activities meet the requirements of the compliance schedule for sources of VOC (see Appendix 1-8).

Verify that the installation with a source subject to Compliance Schedule 1 has certified to the Department, within 5 days after the deadline for each increment of progress, that the required increment of progress has been met.

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

**REGULATORY
REQUIREMENTS:**

REVIEWER CHECKS:

**SOLVENT METAL
CLEANING**

1-32. Installations must meet general requirements for VOCs emitted from solvent metal cleaning operations (SCAPCR 62.5(5)(II)(N)(5)(a and b)).

1-33. Installations must meet specific requirements for VOCs emitted from solvent metal cleaning activities in nondesignated counties (SCAPCR 62.5(5)(II)(N)).

Verify that regulated solvent metal cleaning operations meet the requirements of the compliance schedule for sources of VOC (see Appendix 1-8).

Verify that the installation with a source subject to Compliance Schedule 1 has certified to the Department, within 5 days after the deadline for each increment of progress, that the required increment of progress has been met.

Determine if the installation operates facilities engaged in any of the following activities, in a nondesignated county, that use more than 100 tons/yr of solvents facility-wide:

- cold cleaning
- open top vapor degreasing
- conveyORIZED degreasing operation.

(NOTE: In some cases, the Department may exempt these facilities from their specified requirements.)

Verify that the installation meets the following requirements for cold cleaning operations:

- the cleaner is equipped with a cover
- the cleaner is equipped with some means of draining cleaned parts
- a permanent, conspicuous label that summarizes the operating requirements is displayed on the cleaner
- the cleaned parts are drained for at least 15 s, or until dripping ceases
- the degreaser cover is closed whenever parts are not handled in the cleaner
- waste solvent is stored only in covered containers
- waste solvent is neither disposed of nor transferred to another party, in a manner which allows more than 20 percent of the waste (by weight) to evaporate into the atmosphere.

Verify that the installation meets the following requirements for vapor degreasers:

- the vapor degreaser is equipped with a cover that can be opened and closed easily without disturbing the vapor zone
- the cover is kept closed at all times, except when processing work loads through the degreaser
- solvent carryout is minimized by prescribed methods
- porous or absorbent materials, such as cloth, leather, wood, or rope are not degreased
- workload does not occupy more than half of the degreaser's open top area

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
1-33. (continued)	<ul style="list-style-type: none"> - the degreaser is not loaded to the point where the vapor level drops more than 10 cm when the workload is removed from the vapor zone - spraying always occurs below the vapor level - either solvent leaks are repaired immediately or degreaser is shutdown - waste solvent is stored only in covered containers - ventilation fans are not used near the degreaser opening - waste solvent is not disposed of or transferred to another party, in a manner that greater than 20 percent of the waste solvent (by weight) can evaporate into the atmosphere - the cleaner is not operated in a manner that allows water to be visually detectable in solvent exiting the water separator - exhaust ventilation is not allowed to exceed 20 m³/min/m² of degreaser open area, unless necessary to meet Occupational Safety and Health Administration (OSHA) requirements. <p>Verify that solvent carryout, for vapor degreasers, is minimized by the following methods:</p> <ul style="list-style-type: none"> - racking parts to allow complete drainage - moving parts in and out of the degreaser at less than 3.3 m/min - holding the parts in the vapor zone at least 30 s or until condensation ceases - tipping out any pools of solvent on the cleaned parts before removal from the vapor zone - allowing parts to dry within the degreaser for at least 15 s, or until visually dry. <p>Verify that the installation meets the following requirements for conveyORIZED degreasers:</p> <ul style="list-style-type: none"> - ventilation fans are not used near the degreaser opening - exhaust ventilation is not allowed to exceed 20 m³/min/m² of degreaser open area, unless necessary to meet OSHA requirements - carryout emissions are minimized by racking parts for best drainage and by maintaining the vertical conveyor speed at less than 3.3 m/min - waste solvent is stored only in covered containers - waste solvent is not disposed of nor transferred to another party in a manner which allows more than 20 percent of the waste solvent (by weight) to evaporate into the atmosphere - solvent leaks are repaired immediately or degreaser is shutdown - the cleaner is not operated in a manner that allows water to be visually detectable in solvent exiting the water separator.

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>1-34. Installations must meet specific requirements for VOCs emitted from solvent metal cleaning activities in nonattainment counties (SCAPCR 62.5(5)(II)(N)).</p>	<p>Determine if the installation operates facilities utilizing cold cleaning equipment that use more than 100 tons/yr of solvents facility-wide:</p> <p>Verify that the installation meets the following requirements for cold cleaning operations:</p> <ul style="list-style-type: none"> - the cleaner is equipped with a cover that meets the required design specifications - the cleaner is equipped with some means of draining cleaned parts - a permanent, conspicuous label that summarizes the operating requirements is located on the cleaner - waste solvent is stored only in covered containers - waste solvent is not disposed of or transferred to another party in a manner that allows more than 20 percent of the waste solvent (by weight) to evaporate into the atmosphere - the cover is closed whenever parts are not being handled in the cleaner - the cleaned parts are drained for at least 15 s, or until dripping ceases - if solvent spray is used, the spray is a solid fluid stream that does not cause excessive splashing, not a fine, atomized or shower-type spray. <p>Verify that, for cold cleaners, one of the following control devices is installed if the solvent volatility is greater than 4.3 kPa (33 mm Hg or 0.6 psi) measured at 38 °C (100.4 °F), or if the solvent is heated above 50 °C (122 °F):</p> <ul style="list-style-type: none"> - freeboard that gives a freeboard ratio greater than or equal to 0.7 - water cover - other systems of equivalent control, such as refrigerated chiller or carbon adsorption, approved by the Department. <p>(NOTE: Solvent must be insoluble in water and heavier than water.)</p> <p>Verify that cold cleaner covers are designed so they can be easily operated with one hand if one of the following occurs:</p> <ul style="list-style-type: none"> - the solvent volatility is greater than 2 kPa (15 mm Hg or 0.3 psi) measured and 38 °C (100 °F) - the solvent is agitated - the solvent is heated.

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>OPEN-TOP VAPOR DEGREASERS</p> <p>1-35. Installations must meet specific requirements for VOCs emitted from solvent metal cleaning activities in nonattainment counties (SCAPCR 62.5(5)(II)(N)).</p>	<p>Determine if the installation operates facilities that utilize open-top vapor degreasing equipment.</p> <p>Verify that the installation meets the following requirements for open-top vapor degreasers:</p> <ul style="list-style-type: none"> - the vapor degreaser is equipped with a cover that can be operated easily without disturbing the vapor zone - a permanent, conspicuous label that summarizes operating procedures is located on the degreaser - the cover is kept closed at all times except when workloads are being processed - porous or absorbent materials, such as cloth, leather, wood, or rope, are not degreased - workload does not occupy more than half of the degreaser's open top area - the degreaser is not loaded to the point where the vapor level drops more than 10 cm when the work load is removed from the vapor zone - spraying always occurs below the vapor level - solvent leaks are repaired immediately or degreaser is shutdown - waste solvent is stored only in covered containers - waste solvent is not disposed of or transferred to another party in a manner which allows more than 20 percent of the waste solvent (by weight) to evaporate into the atmosphere - the cleaner is not operated in a manner that allows water to be visually detectable in solvent exiting the water separator - ventilation fans are not used near the degreaser opening - exhaust ventilation is not allowed to exceed 20 m³/min/m² of degreaser open area, unless necessary to meet OSHA requirements. <p>Verify that the installation provides the following safety switches for open-top vapor degreasers:</p> <ul style="list-style-type: none"> - a condenser flow switch and thermostat that shut off the pump heat, if the condenser coolant is not circulating or is too warm - a spray safety switch that shuts off the spray pump if the vapor level drops more than 10 cm. <p>(NOTE: Open-top vapor degreasers with an open area smaller than 1 m² must not use refrigerated chillers or carbon adsorption systems.)</p>

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>1-35. (continued)</p>	<p>Verify that, for open-top vapor degreasers, one of the following control devices is installed:</p> <ul style="list-style-type: none"> - powered cover, if the freeboard ratio is greater than or equal to 0.75, and if the degreaser opening is greater than 1 m² - refrigerated chiller - enclosed design, so the cover or door opens only when the dry part is actually entering or exiting the degreaser - carbon adsorption system with ventilation greater than or equal to 15 m³/min/m² of air/vapor area (when cover is open), and exhausting less than 25 ppm of solvent averaged over one complete adsorption cycle - a control system approved by the Department. <p>Verify that, for open-top vapor degreasers, solvent carryout is minimized by the following methods:</p> <ul style="list-style-type: none"> - racking parts to allow complete drainage - moving parts in and out of the degreaser at less than 3.3 m/min - holding the parts in the vapor zone at least 30 s, or until condensation ceases - tipping out any pools of solvent on the cleaned parts before removal from the vapor zone - allowing parts to dry within the degreaser for at least 15 s, or until visually dry.
<p>CONVEYORIZED DEGREASERS</p> <p>1-36. Installations must meet specific requirements for VOCs emitted from solvent metal cleaning activities in nonattainment counties (SCAPCR 62.5(5)(II)(N)).</p>	<p>(NOTE: Nonattainment counties are all counties other than the following: Anderson, Bamberg, Barnwell, Chesterfield, Darlington, and Hampton.)</p> <p>Verify that the installation meets the following requirements for conveyORIZED degreasers:</p> <ul style="list-style-type: none"> - the cleaner operates with equipment, such as a drying tunnel or rotating (tumbling) basket, that prevents cleaned parts from carrying out solvent liquid or vapor - openings are minimized during operation so entrance and exit silhouette workloads with an average clearance between the parts and the edge of the degreaser opening of less than 10 cm or less than 10 percent of the width of the opening - downtime covers are provided for closing off the entrance and exit during shut-down hours - workplace fans are not used near the degreaser opening - exhaust ventilation does not exceed 20 m³/min/m² of degreaser opening, unless necessary to meet OSHA requirements

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
1-36. (continued)	<ul style="list-style-type: none"> - carryout emissions are minimized by racking parts for best drainage and by maintaining the vertical conveyor speed at less than 3.3 m/min - waste solvent is stored only in covered containers - waste solvent is not disposed of nor transferred to another party in a manner that greater than 20 percent of the waste solvent (by weight) can evaporate into the atmosphere - solvent leaks are repaired immediately or degreaser is shutdown - the cleaner is not operated so as to allow water to be visually detectable in solvent exiting the water separator - downtime covers are placed over entrances and exits of conveyorized degreasers immediately after the conveyors and exhausts are shut down - downtime covers are not removed from entrances and exits until just before startup of conveyorized degreaser. <p>Verify that, for conveyorized degreasers, one of the following control devices is installed:</p> <ul style="list-style-type: none"> - refrigerated chiller - carbon adsorption system with ventilation greater than or equal to 15 m³/min/m² of air/vapor are (when cover is open), and exhausting less than 25 ppm of solvent averaged over one complete adsorption cycle - a control system approved by the Department. <p>Verify that the installation provides the following safety switches for conveyorized degreasers:</p> <ul style="list-style-type: none"> - a condenser flow switch and thermostat that shut off the pump heat if the condenser coolant is not circulating or too warm - a spray safety switch that shuts off the spray pump if the vapor level drops more than 10 cm - a vapor level control thermostat that shuts off the pump heat when the vapor level rises too high. <p>(NOTE: Conveyorized degreasers with an air/vapor interface smaller than 2.0 m² are exempt from the requirements for safety switches.)</p>

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>VOC - PETROLEUM STORAGE</p> <p>1-37. Installations must meet general requirements for VOCs emitted from petroleum liquid stored in fixed roof tanks (SCAPCR 62.5(5)(II)(O) (3)(a and b)).</p> <p>1-38. Installations must meet specific requirements for petroleum liquid stored in fixed roof tanks (SCAPCR 62.5(5) (II)(O)).</p> <p>1-39. Installations must meet specific requirements for openings of fixed-roof tanks in which petroleum liquid is stored (SCAPCR 62.5(5)(II)(O) (d)).</p>	<p>Verify that regulated petroleum liquid stored in fixed roof tanks meets the requirements of the compliance schedule for sources of VOC (see Appendix 1-8).</p> <p>Verify that the installation with a VOC source subject to a compliance schedule reports progress to the Department, within 5 days after the deadline for each increment of progress.</p> <p>Determine if the installation operates any fixed-roof storage tanks with capacities of 40,000 gal or greater that contain VOCs with a true vapor pressure is greater than 1.52 psia.</p> <p>Verify that the installation meets the following requirements for petroleum liquid stored in fixed roof tanks:</p> <ul style="list-style-type: none"> - retrofitted with an internal floating roof equipped with a closure seal or seals to close the space between the roof edge and tank wall - the source has been retrofitted with an equally effective alternative control approved by the Department - maintained so that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials - inspections are conducted through roof hatches once per month, and a complete inspection of cover and seal is conducted whenever the tank is emptied for non-operational reasons, or once per year. <p>Verify that, for petroleum liquid stored in fixed roof tanks, all openings except stub drains are equipped with covers, lids, or seals so following requirements are met:</p> <ul style="list-style-type: none"> - the cover, lid, or seal is in the closed position at all times, except when in actual use - automatic bleeder vents are closed at all times, except when the roof is floated off or landed on the roof leg supports - rim vents, if provided, are set to open when the roof is being floated off the roof leg supports, or at the manufacturer's recommended setting.

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>1-40. Installations must meet specific recordkeeping requirements for fixed-roof tanks in which petroleum liquid is stored (SCAPCR 62.5(5)(II)(O)(f)).</p> <p>1-41. Installations must meet general requirements for petroleum liquid stored in external floating-roof tanks (SCAPCR 62.5(5)(II)(P)(1) and (3)(a and b)).</p>	<p>Verify that the installation maintains the follow records:</p> <ul style="list-style-type: none"> - reports of results from inspections - average monthly storage temperatures and true vapor pressures of petroleum liquids stored - throughput quantities and types of petroleum liquids for each storage tank. <p>Determine if the installation operates any of the following petroleum liquid storage tanks, which are exempt from these requirements:</p> <ul style="list-style-type: none"> - tanks that contain a petroleum liquid with a true vapor pressure less than 27.6 kPa (4.0 psia) and are of welded construction presently possessing a metallic-type shoe seal, a liquid mounted foam seal, a liquid mounted and liquid filled type seal, or other closure device of demonstrated equivalence approved by the Department - tanks that are of welded construction, are equipped with a metallic-type shoe primary seal, and has a secondary seal from the top of the shoe seal to the tank wall (shoe-mounted secondary seal). <p>Determine if the installation operates any petroleum liquid storage tanks with external floating roofs and capacities greater than 150,000 L.</p> <p>Verify that regulated petroleum liquid stored in external floating roof tanks meet the requirements of the compliance schedule for sources of VOC (see Appendix 1-8).</p> <p>Verify that the installation with a VOC source subject to the compliance schedule reports progress to the Department within 5 days after the deadline for each increment of progress.</p> <p>Verify that the installation meets the specific requirements for petroleum liquid stored in external floating-roof tanks.</p>
<p>1-42. Installations must meet specific requirements for VOCs emitted from petroleum liquid stored in external floating roof tanks (SCAPCR 62.5(5)(II)(P)(2)).</p>	<p>Verify that these tanks have been fitted with a continuous secondary seal extending from the floating roof to the tank wall (rim-mounted secondary seal), or with a closure or other device approved by the Department.</p> <p>Verify that all seal closure devices meet the following requirements:</p> <ul style="list-style-type: none"> - there are no visible holes, tears, or other openings in the seal or seal fabric - seals are intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall - for vapor-mounted seals, the area of accumulated gaps between the secondary seal and the tank wall does not exceed 21.2 cm²/m of tank diameter.

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>1-42. (continued)</p>	<p>Verify that all openings in the external floating roof, except for automatic bleeder vents, rim space vents, and leg sleeves, meet the following requirements:</p> <ul style="list-style-type: none"> - are equipped with covers, seals, or lids in the closed position, except when openings are in actual use - are equipped with projections into the tank that remain below the liquid surface at all times. <p>Verify that automatic bleeder vents are closed at all times, except when the roof is floated off or landed on the roof leg supports.</p> <p>Verify that rim vents are set to open only when the roof is being floated off the leg supports, or at the manufacturer's recommended setting.</p> <p>Verify that emergency roof drains are provided with slotted membrane fabric covers or equivalent covers at least 90 percent of the area of the opening.</p> <p>Verify that the installation meets the following requirements:</p> <ul style="list-style-type: none"> - annual inspections performed on these tanks, including a visual inspection of the secondary seal gap - the secondary seal gap is measured annually when the floating roof is equipped with a vapor-mounted seal - records of these inspections are maintained - records of the throughput quantities and types of petroleum liquids stored are maintained.
<p>VOC - CUTBACK ASPHALT</p> <p>1-43. Installations must meet specific requirements for VOCs emitted from the application of cutback asphalt (SCAPCR 62.5(5)(II)(S)).</p>	<p>Verify that the installation does not allow cutback asphalt to be applied unless the following conditions have been met:</p> <ul style="list-style-type: none"> - cutback asphalt is used solely as a penetrating prime coat - long-life asphalt mix stockpile storage is maintained - application is made during the months of January, February, or December. <p>Verify that applications of cutback asphalt meet the requirements of compliance schedule for sources of VOCs (see Appendix 1-8).</p> <p>Verify that the installation with a VOC source subject to the compliance schedule reports progress to the Department within 5 days after the deadline for each increment of progress.</p>

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>VOC - BULK GASOLINE STORAGE</p> <p>1-44. Installations must meet general requirements for VOCs emitted from any bulk gasoline terminals and the appurtenant equipment necessary to load or unload gasoline tank trucks (SCAPCR 62.5(5)(II)(T)(3)).</p> <p>1-45. Installations must meet specific requirements for VOCs emitted from any bulk gasoline terminals and the appurtenant equipment during the loading or unloading of gasoline tank trucks (SCAPCR 62.5(5)(II)(T)(1 and 2)).</p>	<p>Verify that bulk gasoline terminals and the appurtenant equipment necessary to load or unload gasoline trucks meet the requirements of the compliance schedule for sources of VOC (see Appendix 1-8).</p> <p>Verify that the installation with a source subject to compliance schedule for sources of VOC has certified to the Department, within 5 days after the deadline for each increment of progress, whether the required increment of progress has been met.</p> <p>Verify that bulk gasoline terminals are equipped with a vapor control system, properly installed, in good working order, in operation, and consisting of one of the following:</p> <ul style="list-style-type: none"> - an adsorber or condensation system that does not allow mass emissions of VOC to exceed 4.7 gr/gal of gasoline loaded - a vapor collection system that directs all vapors to a fuel gas system - alternative controls approved by the Department. <p>Verify that all displaced vapors are vented only to the vapor control system.</p> <p>Verify that means are provided to prevent liquid drainage from the loading device when it is not in use or to accomplish complete drainage before the loading device is disconnected.</p> <p>Verify that all loading and vapor lines are equipped with fittings that make vapor-tight connections and that close automatically when disconnected.</p> <p>Verify that the installation meets the following requirements for the management of gasoline:</p> <ul style="list-style-type: none"> - avoidable visible liquid leaks during loading or unloading operations - pressure in the vapor collection system does not exceed the gasoline tank truck pressure relief settings - gasoline is not discarded in sewers - gasoline is not stored in open containers - gasoline is not handled in any manner that would result in evaporation.

**COMPLIANCE CATEGORY:
CLEAN AIR ACT (CAA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>AMBIENT AIR QUALITY STANDARDS</p> <p>1-46. Installations must meet the standards for ambient air quality (SCAPCR 62.5(2)).</p> <p>TOXIC AIR POLLUTANTS</p> <p>1-47. Installations must meet specific requirements for toxic air pollutants emitted from existing sources (SCAPCR 62.5 (8)(I)(A) and (II)(B)).</p>	<p>Verify that the installation meets the standards for ambient air quality (see Appendix 1-9).</p> <p>Determine if the installation has any sources of toxic air pollutants.</p> <p>Verify that the installation has an operating permit for any source of toxic air pollutants that has a potential emission of 1000 lb/mo or greater for any single pollutant.</p> <p>Verify that the installation provides the Department with data on toxic emissions.</p> <p>Verify that the installation does not exceed the allowable ambient air concentrations at the property line in any 24-h period for toxic air pollutants (see Appendix 1-10).</p> <p>Verify that records are maintained documenting emissions produced by the installation.</p>

Appendix 1 - 1

South Carolina Infectious Wastes

(Source: SCAPCR 62.1(I)(30))

Infectious wastes include, but are not limited to, the following:

- a. *Sharps* - any discarded article that may cause punctures or cuts (e.g., needles, syringes, pasteur pipettes, lancets, broken glass, and scalpel blades used in patient care or in medical, research, or laboratories applications).
- b. *Microbiologicals* (Cultures and Stocks of Infectious Agents and Associated Biologicals) - specimen cultures from medical and pathological laboratories, including, but not limited to, cultures and stocks of infectious agents from research, clinical, and industrial laboratories; wastes from the production of biologicals, and discarded live and attenuated vaccines; and culture dishes/devices used to transfer, inoculate, and mix cultures.
- c. *Blood/Blood Products and Body Fluids to Which Universal Precautions Apply* - all waste bulk unabsorbed human blood, blood products (that is, serum, plasma, and other blood components) and visibly bloody body fluids such as suctioned fluids, excretions, and secretions. Body fluids to which universal precautions apply are cerebrospinal fluids, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, amniotic fluid, semen, and vaginal secretions.
- d. *Pathological Wastes* - including, but not limited to, fetuses, tissues, organs, limbs, and other body parts removed during surgery or autopsy, and excluding tissue treated or preserved with formaldehyde or other preserving agents.
- e. *Contaminated Animal Carcasses, Body Parts, and Bedding* - those exposed to pathogens in research or in the production of biologicals or in vivo testing of pharmaceuticals.
- f. *Isolation Waste from Communicable Disease* - wastes contaminated with known or potentially infectious matter from patients with diseases considered communicable and requiring isolation, regardless of the health care delivery site, that is, patient's room, surgery, dialysis, or other site.
- g. *Miscellaneous Contaminated Wastes* - materials designated by written facility policy as infectious; other materials designated by written Department policy as requiring special handling, or as a potential public health threat.

Appendix 1 - 2

South Carolina Waste Classification

(Source: SCAPCR 62.1(I))

Waste Types 0 through 6

a. Type 0: Trash - a mixture of highly combustible waste such as paper, cardboard, wood boxes, and combustible floor sweepings from commercial and industrial activities. The mixture contains up to 10 percent by weight of plastic bags, coated paper, laminated paper, treated corrugated cardboard, oily rags, and plastic or rubber scraps. Typical composition: 10 percent moisture, 5 percent incombustible solids, and a heating value of approximately 8500 Btu/lb as fired.

b. Type 1: Rubbish - a mixture of combustible waste such as paper cardboard cartons, wood scrap, foliage, and combustible floor sweepings from domestic, commercial, and industrial activities. The mixture contains up to 20 percent by weight of restaurant or cafeteria waste, but contains little or no treated papers plastic, or rubber wastes. Typical composition: 25 percent moisture, 10 percent incombustible solids and a heating value of approximately 6500 Btu/lb as fired.

c. Type 2: Refuse - consists of an approximately even mixture of rubbish and garbage by weight. This type of waste is common to apartment and residential occupancy. Typical composition: up to 50 percent moisture, 7 percent incombustible solids, and a heating value of approximately 4300 Btu/lb as fired.

d. Type 3: Garbage - consists of animal and vegetable wastes from restaurants, cafeterias, hotels, hospitals, markets, and like facilities. Typical composition: up to 70 percent moisture, up to 5 percent incombustible solids and has a heating value of approximately 2500 Btu/lb as fired.

e. Type 4: Human and animal remains - consisting of carcasses, organs, and solid organic wastes from hospitals, laboratories, abattoirs, animal pounds, and similar sources.

Typical composition: up to 85 percent moisture, 5 percent incombustible solids, and a heating value of approximately 1000 Btu/lb as fired.

f. Type 5: Byproduct waste - gaseous, liquid, or semi-liquid, such as tar, paints, solvents, sludge, fumes, etc., from industrial operations. Btu values must be determined by the individual materials to be destroyed.

g. Type 6: Solid byproduct waste - rubber, plastics, wood waste, etc., from industrial operations. Btu values must be determined by the individual materials to be destroyed.

Appendix 1 - 3

South Carolina Exemptions from Permit Requirements

(Source: SCAPCR 62.1(II)(F))

Exemptions from Permit Requirements

1. No permits are required for the following sources that burn virgin fuel and were constructed prior to 11 February 1971:
 - a. natural gas boilers
 - b. oil-fired boilers of 50 by 10^6 Btu/h rated input capacity
 - c. coal-fired boilers of 20 by 10^6 Btu/h rated input capacity or smaller.
2. No permits are required for the following sources:
 - a. boilers and space heaters of less than 1.5 by 10^6 Btu/h rated input capacity that burn virgin fuel
 - b. comfort air-conditioning or ventilation systems
 - c. motor vehicles
 - d. laboratory hoods
 - e. emergency power generators of less than 150 kW rated capacity
 - f. sources emitting only steam, air, nitrogen, oxygen, carbon, carbon dioxide, or any physical combination of these
 - g. sources with an uncontrolled particulate matter emission rate of less than 1 lb/mo and/or uncontrolled VOC emission rate of less than 1000 lb/mo may not require permits; however, source information needs to be submitted to the Department and a determination on the need for permits is then made
 - h. sources from which only emissions are fugitive must submit source information, and the need for a permit is determined by the Departments on a case-by-case basis.

Appendix 1 - 4

South Carolina Exemptions from the Requirements for Open Burning

(Source: SCAPCR 62.2(A through K))

The following sources are exempt from the requirements for open burning:

- A. Open burning of leaves, tree branches, or yard trimmings originating on the premises of private residences and burned on those premises.
- B. Open burning in connection with the preparation of food for immediate consumption.
- C. Campfires and fires used solely for recreational purposes, ceremonial occasions, or human warmth.
- D. Fires purposely set to forest lands for specific management practices in accordance with guidelines acceptable to the Department and as administered by the South Carolina Forestry Commission. These management practices include:
 - prescribed burning under existing standards for various management objectives
 - site preparation burning for purposes of clearing an area for regeneration.
- E. Fires purposely set for agricultural control of diseases, weeds, pests, and other specific agricultural purposes in accordance with practices acceptable to the Department.
- F. Open burning of trees, brush, grass, and other vegetable matter for game management purposes in accordance with practices acceptable to the Department.
- G. Open burning in areas other than predominantly residential for the purpose of land clearing or right-of-way maintenance. This is exempt only if the following minimum conditions are followed:
 - the location of the burning is a sufficient distance, but not less than 1000 ft, from public roadways and all residential, commercial, and industrial sites not a part of the contiguous property on which the burning is conducted
 - winds during the time of the burning are away from any area in which the ambient air may be significantly affected by smoke from the burning if that area contains a public roadway or a residential, commercial, or industrial site- the amount of dirt on the material being burned is minimized
 - no heavy oils, asphalt materials, items containing natural or synthetic rubber, or any materials other than plant growth are burned
 - the initial burning is started only between 9:00 a.m. and 3:00 p.m.; no combustible material may be added to the fire between 3:00 p.m. of one day and 9:00 a.m. the following day
 - no more than two piles 30 ft by 30 ft or equivalent are burned within a 6-acre area at one time
 - in the case of land clearing, all salvageable timber and pulpwood are removed.
- H. Fires set for the purposes of training public fire-fighting personnel when authorized by the appropriate governmental entity, and fires set by a private industry as a part of an organized program of drills for the training of fire-fighting personnel. These are exempt only if the drills are solely for the purpose of fire-fighting training, and the duration of the burning is held to the minimum required for such purposes. Prior approval is required only for sites which are not established training sites.
- I. Open burning of household trash on the premises of and originating from private residences where services for the disposal of such materials are not available. The location of such burning must be at least 500 ft from any inhabited building.

(continued)

Appendix 1 - 4 (continued)

- J. Open burning, on the property where it occurs, of construction waste from building and construction operations are exempt only if the following conditions are met:
- the location of the building is at least 500 ft from any occupied structure other than a dwelling or structure located on the property on which the burning is conducted
 - heavy oils, asphalt materials, items containing natural or synthetic rubber, or any other trade wastes that produce smoke in excess of 40 percent opacity are not burned
 - burning is conducted only between the hours of 9:00 a.m. and 3:00 p.m.
- K. Open burning, in remote or specified areas:
- of trade waste provided the burning is conducted in accordance with letter "G" of these of exemptions; such burning must be of a nonrecurring nature
 - for nonrecurring unusual circumstances
 - for experimental burning for purposes of data gathering and research.

(NOTE: Prior approval for the types of burning listed in letter "K" must be obtained from the Department.)

Appendix 1-5

Allowable Discharge Particulate Matter

(Source: SCDHEC 62.5, Standard No. 1, II(A and B))

A. Allowable Discharge

The allowable discharge of particulate matter resulting from fuel burning operations are limited to the values obtained by use of Figure 1 and/or Part B. (For the purpose of determining heat input, total equipment capacity refers to total equipment capacity discharging through each stack. If a boiler has more than one stack, the total rated capacity will be the boiler rated capacity discharging to these stacks.) Interpolation of Figure 1 for fuel burning operations of 1300 MBtu/h heat input and larger shall be accomplished by using the following equation:

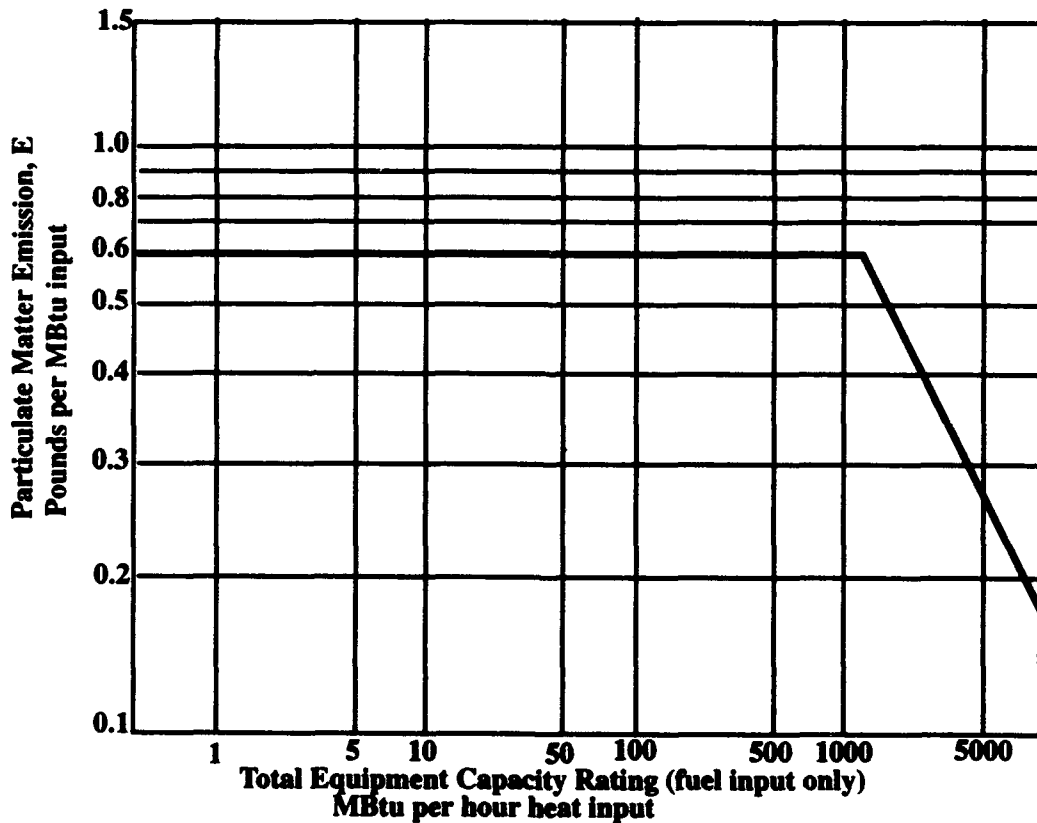
$$E = 57.84 P^{-0.637}$$

where E = the allowable emission rate in pounds per MBtu heat input, and
 P = MBtu heat input per hour.

B. Special Provisions

All fuel burning operations of 10 MBtu/h heat input and smaller constructed prior to 11 February 1971 are allowed 0.8 lb/MBtu input.

Figure 1



Appendix 1 - 6

South Carolina Limits of Emissions of Sulfur Dioxide

(Source: SCAPCR 62.5(1)(III)(B.3 and C))

Class	Rated Source Size	Maximum Allowable Emissions (pounds of SO₂ per MBtu input)
Class I		
Charleston County	10 MBtu/h or less	3.5
	greater than 10 MBtu/h	2.3
Class II		
Aiken and Anderson Counties	1000 MBtu/h or less	3.5
	greater than 1000 MBtu/h	2.3
Class III		
all other counties	all sizes	3.5

Appendix 1 - 7

South Carolina Other Emissions Limitations for Hazardous Waste Incinerators

(Source: SCAPCR 62.5(3)(III)(E)(4))

Material	Emissions Limit (Pounds per 10 ³ gal of liquid waste or waste fuel being burned)
Nickel	0.91
Cadmium	0.015
Chromium	0.075
Arsenic	0.038
Lead	0.75
The values in this table may be adjusted if the Btu content and density of the waste material vary from 150,000 Btu/gal content and 7.55 lb/gal density.	

Appendix 1 - 8

South Carolina Compliance Schedule for Sources of VOCs

(Source: SCAPCR 62.5(5)(I)(D)(Schedule 1))

Compliance Schedule for Sources of VOC
<ol style="list-style-type: none">1. Submit to the Department construction permit applications and final plans for the emission control system and/or new process equipment and/or modification of existing process equipment within 2 mo from the date of notification.2. Issue purchase orders and contracts for the emission control systems and/or process equipment and/or modification of existing process equipment to accomplish emission control within 5 mo from the date of notification.3. Initiate onsite construction or installation of the emission control and/or process equipment and/or modification of existing process equipment within 8 mo from the date of notification.4. Complete onsite construction or installation of the emission control and/or process equipment and/or modification of existing process equipment within 16 mo from the date of notification.5. Achieve final compliance within 18 mo from the date of notification.

Appendix 1 - 9

South Carolina Standard for Ambient Air Quality

(Source: SCAPCR 62.5(2))

Pollutant	Measuring Interval	Micrograms per cubic meter (unless otherwise noted ⁽¹⁾ and (2))
SO ₂	3 h 24 h annual	1300 ⁽⁴⁾ 365 ⁽⁴⁾ 80
Total suspended particulates	Annual geometric mean	75
PM ₁₀	24 h annual	150 ⁽³⁾ 50 ⁽³⁾
CO	1 h 8 h	40 mg/m ³ 10 mg/m ³
O ₃	1 h	0.12 ppm ⁽³⁾
Gaseous fluorides (as HF)	12-h average 24-h average 1-week average 1-mo average	3.7 2.9 1.6 0.8
NO ₂	annual	100
Lead	calendar quarterly mean	1.5

⁽¹⁾Arithmetic Average except in case of total suspended particulate matter.

⁽²⁾At 25 °C and 760 mm Hg.

⁽³⁾Attainment determinations are made based on the criteria contained in Appendixes H and K, 40 CFR 50 (1 July 1987).

⁽⁴⁾Not to be exceeded more than once a year.

Appendix 1 - 10

Limits of Toxic Air Pollutants (Source: SCAPCR 62.5(8)(II)(B))

The allowable ambient air concentrations of toxic air pollutants are limited to the following.

CHEMICAL NAME	CAS NO.	MAXIMUM ALLOWABLE CONCENTRATION ($\mu\text{g}/\text{m}^3$)*
Category I: Low Toxicity		
Acetic Anhydride	108247	500.00
Acetonitrile	75058	1750.00
Ammonium Chloride	12125029	250.00
Antimony Compounds	>	2.50
Caprolactam, vapor	105602	500.00
Caprolactam, dust	105602	25.00
Chlorine	7782505	75.00
2 -Chloroacetophenone	532274	7.50
Cyanamide	420042	50.00
Cyanic Acid	420053	500.00
Cyanide	57125	125.00
Cyanide compounds ¹	>	+
Cyanoacetamide	107915	125.00
Cyanogen	460195	500.00
Ethanolamine	141435	200.00
Formamide	75127	750.00
Formic Acid	64186	225.00
Furfural	98011	200.00
Hydrochloric Acid	7647010	175.00
Hydrogen Cyanide	74908	250.00
Isopropylamine	75310	300.00
Methyl Ethyl Ketone (2-Butone)	78933	14750.00
Methyl Methacrylate	80626	10250.00

(continued)

Appendix 1 - 10 (continued)

CHEMICAL NAME	CAS NO.	MAXIMUM ALLOWABLE CONCENTRATION ($\mu\text{g}/\text{m}^3$)*
Methylamine	74895	300.00
Methylene Chloride	75092	8750.00
Methyl-t-butyl Ether	1634044	+
Naphthalene	91203	1250.00
Nitric Acid	7697372	125.00
l-Nitropropane	108032	2250.00
Phosphoric Acid	7664382	25.00
Propionaldehyde	123386	+
Styrene	100425	5325.00
Titanlure Tetrachloride	7550450	2500.00
Trichloroethylene	79016	6750.00
Trimethylpentane (2,2,4 -)	540841	8750.00
Category II: Moderate Toxicity		
Acetaldehyde	75070	1800.00
Acrylamide	79061	0.30
Aldicarb	116063	6.00
Allyl Chloride	107051	30.00
Butanethiol	109795	15.00
Cresol	1319773	220.00
Cumene	98828	9.00#
p- Dichlorobenzene	106467	4500.00
Diethanolamine	111422	129.00
Diethylaniline (N, N-)	121697	250.00
Diisocetyl Phthalate	2671400	50.00
m-Dinitrobenzene	99650	10.00
Dinitro-o-cresol (4,6-) and salts	534521	2.00
Dioctyl Phthalate	117840	50.00
Ethanethiol	75081	10.00
Ethyl Benzene	100414	4350.00

(continued)

Appendix 1 - 10 (continued)

CHEMICAL NAME	CAS NO.	MAXIMUM ALLOWABLE CONCENTRATION ($\mu\text{g}/\text{m}^3$)*
Ethyl Chloride	75003	26400.00
Ethylene Dibromide	106934	770.00
Furfuryl Alcohol	98000	400.00
Hexachlorocyclohexane (multiple isomers)	608731	5.00
Hexamethylene-1, 6-diisocyanate	822060	0.34
Hydrogen Sulfide	7783064	140.00
Hydroquinone	123319	20.00
Isophorone	78591	250.00
Malathion	121755	100.00
Maleic Anhydride	108316	10.00
Methyl Mercaptan	74931	10.00
Methylene Biphenyl Isocyanate	101688	2.00
Methyl-Isobutyl. Ketone	108101	2050.00
Nitroglycerin	55630	5.00
Oxalic Acid	144627	10.00
Pentachlorophenol	87865	5.00
Phenol	108952	190.00
p-Phenylenediamine	106503	1.00
Phenylhydrazine	100630	200.00
Phosgene (Carbonyl Chloride)	75445	4.00
Phosphorus	7723140	0.50
Picric Acid	88891	1.00
Pyrethrum	8003347	50.00
Rotenone	83794	50.00
Sodium Hydroxide	1310732	20.00
Sulfuric Acid	7664939	10.00
Tetrachloroethylene (Perchloroethylene)	127184	3350.00
Toluene Diisocyanate	584840	0.40
Toluene-2, 4-diisocyanate	584849	0.40

(continued)

Appendix 1 - 10 (continued)

CHEMICAL NAME	CAS NO.	MAXIMUM ALLOWABLE CONCENTRATION ($\mu\text{g}/\text{m}^3$)*
1,2,4-Trichlorobenzene	120821	400.00
Urethane (Carbamic Acid Ethyl Ester)	51796	5000.00
Vinyl Fluoride	75025	19.00
Xylene	1330207	4350.00
m-Xylene	108383	4350.00
o-Xylene	95476	4350.00
p-Xylene	106423	4350.00
Category III: High Toxicity		
Acetamide	60355	+
Acetophenone	98862	+
Acetylaminofluorine (2-)	53963	+
Acrolein	107028	1.25
Acrylic Acid	79107	147.50
Acrylonitrile	107131	22.50
p-Aminodiphenyl	92671	0.00
Aniline	62533	50.00
Anisidine (o-)	90040	2.50
p-Anisidine	04949	2.50
Arsenic Pentoxide	13282	1.00
Arsenic	7440382	1.00
Benzene	71432	150.00
Benzidine	92875	0.00
Benzotrichloride	98077	300.00
Benzyl Chloride	100447	25.00
Beryllium Oxide	1304569	0.01
Beryllium Sulfate	13510491	0.01
Beryllium	7440417	0.01
Biphenyl	92524	6.00
Bis (Chloromethyl) Ether	542881	0.03

(continued)

Appendix 1 - 10 (continued)

CHEMICAL NAME	CAS NO.	MAXIMUM ALLOWABLE CONCENTRATION ($\mu\text{g}/\text{m}^3$)*
Bis- (2-ethylhexyl) phthalate	117817	25.00
Bromoform	75252	25.85
Butadiene (1,3 -)	106990	110.50
n-Butylamine	109739	75.00
Cadmium Oxide	1306190	0.25
Cadmium Sulfate	10124364	0.20
Cadmium	7440439	0.25
Calcium Cyanamide.	156627	2.50
Captan	133062	25.00
Carbaryl	63252	25.00
Carbon Disulfide	75150	150.00
Carbon Tetrachloride	56235	150.00
Carbonyl Sulfide	463581	12250.00
Catechol	120809	297.00
Chloramben	133904	+
Chlordane	57749	2.50
Chloroacetic Acid	79118	900.00
Chlorobenzene	108907	1725.00
Chlorobenzylate	510156	+
Chloroform	67663	250.00
Chloromethyl Methyl Ether	107302	+
p-Chloronitrobenzene	100005	5.00
Chloroprene	126998	175.00
Chromium (+6) Compounds	>	2.50
Cobalt Compounds	>	0.25
Coke Oven Emissions	>	+
Cresols/cresylic acid and mixture	1319773	220.00
Cresol (m-)	108394	110.50
Cresol (o-)	95487	110.50

(continued)

Appendix 1 - 10 (continued)

CHEMICAL NAME	CAS NO.	MAXIMUM ALLOWABLE CONCENTRATION ($\mu\text{g}/\text{m}^3$)*
Cresol (p-)	106445	110.50
D(2,4-) ,salts and esters	94757	50.00
DDE	3547044	+
Diazomethane	334883	2.00
Dibenzofuran	132649	+
Dibromo-3-chloropropane (1,2-)	96128	0.05
Dibutylphthalate	84742	25.00
3,3 -Dichlorobenzidine	91941	0.15
Dichloropropene (1,3-)	542756	7.00#
Dichlorvos	62737	4.52
Diethyl Phthalate	84662	25.00
Diethyl Sulfate	64675	+
3,3 -Dimethoxybenzidine	119904	0.30
Dimethyl Benzidine(3,3'-)	119937	+
Dimethyl Carbamoyl Chloride	79447	+
Dimethyl Formamide	68122	149.50
1,1 Dimethyl Hydrazine	57147	5.00
1,2 Dimethyl Hydrazine	540738	5.00
Dimethyl Phthalate	131113	25.00
Dimethyl Sulfate	77781	2.50
4-Dimethylaminoazobenzene	60117	125.00
Dinitrophenol (2,4-)	51285	+
Dinitrotoluene (2,4-)	121142	1.50
Dioxane	123911	450.00
Diphenylhydrazine(1,2-)	122667	+
Epichlorohydrin	106898	50.00
Epoxybutane (1,2-)	106887	+
Ethyl Acrylate	140885	102.50
Ethylene Dichloride	107062	200.00

(continued)

Appendix 1 - 10 (continued)

CHEMICAL NAME	CAS NO.	MAXIMUM ALLOWABLE CONCENTRATION ($\mu\text{g}/\text{m}^3$)*
Ethylene Glycol	107211	650.00
Ethylene Oxide	75218	10.00
Ethylene Thiourea	96457	+
Ethylenimine	151564	5.00
Ethylidene Dichloride	75343	2025.00
Formaldehyde	50000	7.50
Glycidaldehyde	7654344	75.00
Glycol Ethers ²	>	+
Heptachlor	76448	2.50
Hexachlorobenzene	118741	+
Hexachlorobutadiene	87683	1.20
Hexachlorocyclopentadiene	77474	0.50
Hexachloroethane	67721	48.50
Hexachloronaphthalene	1335871	1.00
Hexamethylphosphoramide	680319	14.50
Hexane	110543	200.00#
Hydrazine	302012	0.50
Kepone	143500	0.00
Ketene	46314	4.50
Lead Arsenate	7645252	0.75
Lead (+2) Arsenate	7784409	0.75
Lindane	58899	2.50
Manganese Compounds	>	25.00
Mercury	7439976	0.25
Methanol	67561	1310.00
Methoxychlor	72435	50.00
Methyl Bromide	74839	100.00
Methyl Chloride	74873	515.00
Methyl Chloroform	71556	9550.00

(continued)

Appendix 1 - 10 (continued)

CHEMICAL NAME	CAS NO.	MAXIMUM ALLOWABLE CONCENTRATION ($\mu\text{g}/\text{m}^3$)*
Methyl Hydrazine	60344	1.75
Methyl Iodide	74884	58.00
Methyl Isocyanate	624839	0.23
Methylene Bis-2-chloroaniline (4,4-)	101144	1.10
4,4-Methylenedianiline	101779	4.00
Mineral Fibers, Fine ³	>	+
Mineral Oil Mist (paraffinic)	8012951	25.00
Mirex	2385855	4500.00
a-Naphthylamine	134327	0.00
b-Naphthylamine	91598	0.00
Nickel Carbonyl	13463393	1.75
Nickel Oxide	1313991	5.00
Nickel Sulfate	7786814	5.00
Nickel	7440020	0.50
p-Nitroaniline	100016	15.00
Nitrobenzene	98953	25.00
4 -Nitrobiphenyl	92933	0.00
Nitrogen Mustard	51752	0.00
p-Nitrophenol	100027	0.00
Nitropropane (2 -)	79469	182.00
Nitrosodimethylamine	62759	0.00
Nitrosomorpholine	59892	5000.00
p-Nitrosophenol	104916	0.00
Nitroso-N-methylurea (N-)	684935	+
p-Nitrotoluene	99990	5.50
Octachloronaphthalene	2234131	0.50
Octadecanoic Acid (n-)	57114	+
Paraquat	1910425	0.50
Parathion	56382	0.50

(continued)

Appendix 1 - 10 (continued)

CHEMICAL NAME	CAS NO.	MAXIMUM ALLOWABLE CONCENTRATION ($\mu\text{g}/\text{m}^3$)*
Pentachloronitrobenzene	82688	+
Phosphine	7803512	2.09
Phthalic Anhydride	85449	30.30
Polychlorinated Biphenyls (PCB) (multiple compounds)	>	2.50
Polycyclic Organic Matter ⁴	>	160.00
Propane Sultone (1,3-)	1120714	+
b-Propiolactone	57578	7.50
Propoxur	114261	2.50
Propylene Dichloride	78875	1750.00
1,2 Propylene Oxide	75569	250.00
Propylenimine (1,2-)	75558	23.35
Pyrethrin I	121211	25.00
Pyrethrin II	121299	25.00
Quinoline	91255	+
Quinone	106514	2.00
Selenium Compounds	>	1.00
Styrene Oxide	96093	+
Tetrachlorinated Dibenzo-p-dioxins	1746016	0.00
1,1,2,2-Tetrachloroethane (Acetylene tetrachloride)	79345	35.00
Toluene	108883	2000.00
Toluenediamine (2,4-)	95807	+
Toluidine (0-)	95534	43.85
Toxaphene	8001352	2.50
Trichloroethane (1,1,2-)	79005	273.00
Trichlorophenol(2,4,5-)	95954	+
Trichlorophenol(2,4,6-)	88062	+
Triethylamine	121448	207.00
Trifluralin	1582098	+

(continued)

Appendix 1 - 10 (continued)

CHEMICAL NAME	CAS NO.	MAXIMUM ALLOWABLE CONCENTRATION ($\mu\text{g}/\text{m}^3$)*
Vinyl Acetate	108054	176.00
Vinyl Bromide	593602	100.00
Vinyl Chloride	75014	50.00
Vinylidene chloride	75354	99.00
Xylidine	1300738	50.00

* These values are rounded to the nearest hundredth of a ($\mu\text{g}/\text{m}^3$)

+ These numbers are to be determined

> There is no Chemical Abstract Service (CAS) number

The verified reference concentration (Rfc) is established by the USEPA.

¹ XCN where X = H^+ or any other group where a formal dissociation may occur. For example KCN or $\text{Ca}(\text{CN})_2$.

² Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol $\text{R}-(\text{OCH}_2\text{CH}_2)_n-\text{OR}'$, where:

n - 1, 2, or 3

R = Alkyl or aryl groups

R' = R, H, or groups which, when removed, yield glycol ethers with the structure: $\text{R}-(\text{OCH}_2\text{CH}_2)_n-\text{OH}$

Polymers are excluded from the glycol category.

³ Includes mineral fiber emissions from facilities manufacturing or processing glass, rock, and slag fibers (or other mineral derived fibers) of average diameter 1 μm or less.

⁴ Includes organic compounds with more than one benzene ring and which have a boiling point greater than or equal to 100 °C.

INSTALLATION:	COMPLIANCE CATEGORY: CLEAN AIR ACT (CAA) South Carolina Supplement	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

SECTION 2

CLEAN WATER ACT (CWA)

South Carolina Supplement

SECTION 2

CLEAN WATER ACT (CWA) South Carolina Supplement

The State of South Carolina has adopted by reference the national numeric criteria published by the U. S. Environmental Protection Agency (USEPA) to protect aquatic life pursuant to Section 304(a) of the Federal *Clean Water Act* (CWA) for ammonia and chlorine.

These definitions were obtained from the following:

- *Water Classifications and Standards (WCS)*, Regulation 61-68, Section B,
- *South Carolina Department of Health and Environmental Control (DHEC)*, Regulation 61-82, Section I
- *Pollution Control Act*, Section 48-1-10
- *South Carolina Well Standards and Regulations (SCWSR)*, Regulation 61-71.2
- *Groundwater Use Act*, Section 49-5-30
- *Water Use Reporting and Coordination*, Regulation 121-1-.2
- *Water Resources Commission (WRC)*, Regulation 121-2.2
- *Underground Injection Control Regulations*, Regulation 61-87.2
- *National Pollutant Discharge Elimination System (NPDES) Permits*, Regulation 61-9, Sections 61-9.122.2, 61-9.122.41(m)(1), (n)(1), and 61-9.122.26(b).

Definitions

- *Abandoned Well* - a well the use of which has been permanently discontinued or that is in a state of disrepair so it cannot be used for its intended purpose or for monitoring purposes.
- *Abandonment of a Waste Treatment Facility* - the cessation of daily visits to the waste treatment facility by the certified operator in charge for the purpose of ensuring proper operation and maintenance of a waste treatment facility.
- *Administrator* - the Administrator of the USEPA or any delegated employee of the USEPA.
- *Agricultural* - use of water for stock watering, irrigation, and other farm purposes.
- *Agricultural Water Use* - any using, withdrawing, obtaining, or diverting of any surface water, groundwater, or other water within the state for use primarily in the production of crops or husbandry of livestock.
- *Aquaculture* - the cultivation, production, or marketing of domestic aquatic organisms including any fish, aquatic invertebrates, or aquatic plants that are spawned, produced, or marketed as a cultivated crop in the waters of the state.
- *Bypass* - the intentional diversion of waste streams from any portion of a treatment facility.
- *Casing* - a pipe or tubing of appropriate material, of varying diameter and weight, lowered into a bore hole during or after drilling in order to support the sides of the hole and thus prevent the walls from caving in, to prevent loss of drilling mud into permeable strata, or to prevent fluids from entering or leaving the hole.

- *Certified Well Driller* - a drillers registered in South Carolina with the Board of Certification of the Environmental Systems Operators.
- *Closeout* - the compliant cessation of waste treatment facility operations.
- *Commission* - the South Carolina Water Resources Commission.
- *Consumptive Use* - any use of water withdrawn from the ground other than a nonconsumptive use.
- *Contaminant* - any substance or matter that degrades the quality of naturally occurring water either directly or indirectly as a result of man's activity.
- *Continuous Discharge* - a discharge that occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities.
- *Daily Discharge* - the discharge of a pollutant measured during a calendar day or any 24-h period that reasonably represents the calendar day for the purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the day.
- *Department* - the South Carolina DHEC.
- *Dewatering Operation* - an operation that is withdrawing groundwater from an aquifer for the purpose of draining an excavation or preventing or retarding groundwater flow into an excavation.
- *Director* - the Director of the South Carolina DHEC.
- *Discharge* - any discharge or discharge of any sewage, industrial wastes or other wastes, whether treated or not, into any of the waters of the state.
- *Discharge of a Pollutant* - any addition of any pollutant or combination of pollutants to waters of the state from any point source, or any addition of any pollutant or combination of pollutants to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft used as a means of transportation. This definition includes additions of pollutants into waters of the state from all of the following:
 1. surface runoff that is collected or channeled by man
 2. discharges through pipes, sewers, or other conveyances owned by a state, municipality, or other persons that do not lead to a treatment works
 3. discharges through pipes, sewers, or other conveyances that lead into privately owned treatment works.

This term does not include an addition of pollutants by any indirect discharger.

- *Disposal System* - a system for disposing of sewage, industrial waste, or other wastes, including sewerage systems and treatment works.
- *Effluent Limitation* - any restriction imposed by the Department on quantities, discharge rates, and concentrations of pollutants that are discharged from point sources into waters of the state, the waters of the contiguous zone, or the ocean.

- *Effluent Limitation Guidelines* - a regulation published by the Administrator under the CWA to adopt or revise effluent limitations.
- *Existing Water User* - a withdrawer, obtainer, or utilizer of groundwater prior to 24 July 1981.
- *Flow Rate* - the volume per unit of time of a fluid that emerges from an orifice, pump, or turbine, or passes along a conduit or channel.
- *Fluid* - material or substance that flows or moves whether in a semisolid, liquid, sludge, gas, or any other form or state.
- *Formation* - a body of rock characterized by a degree of lithologic homogeneity that is prevailing but not necessarily tabular, and is mappable on the earth's surface or traceable in the subsurface.
- *Formation Fluid* - fluid present in a formation under natural conditions as opposed to introduced fluids.
- *General Permit* - a state permit or a NPDES permit authorizing a category of discharges or activities.
- *Groundwater* -
 1. water below the land surface in a zone of saturation
 2. water of underground streams, channels, artesian basins, reservoirs, lakes, and other water under the surface of the earth whether percolating or otherwise, natural or artificial, that is contained within, flows through, or borders upon South Carolina or any portion of this state including those portions of the Atlantic Ocean that South Carolina has jurisdiction over.
- *Indirect Discharger* - a nondomestic discharge introducing pollutants to a publicly owned treatment works (POTW).
- *Industrial Waste* - any liquid, gaseous, solid, or other waste substance or a combination thereof resulting from any process of industry, manufacturing, trade, or business, or from the development of any natural resources.
- *Industry* - a private person, corporation, firm, plant, or establishment that discharges sewage, industrial wastes, or other wastes into the waters of the state.
- *Injection* - the emplacement of fluid into the subsurface or groundwaters by an injection well, except fluids used in association with well construction, development, or abandonment.
- *Injection Well* - any well used or intended to be used for injection.
- *Injection Zone* - a geological formation, group of formations, or part of a formation that is receiving injection, has received injection, or is intended to receive injection.
- *Lagoon* - a relatively small body of water contained in an earthen basin or controlled shape that is designed for treatment or handling wastewater.

- *Large Municipal Separate Storm Sewer System* - municipal separate storm sewers that meet one of the following criteria:
 1. located in an incorporated place with a population of 250,000 or more as determined by the latest Decennial Census by the Bureau of Census
 2. located in counties with unincorporated urbanized areas with a population of 250,000 or more according to the latest Decennial Census by the Bureau of Census
 3. other systems determined by the Department.
- *Maximum Daily Discharge Limitation* - the highest allowable daily discharge.
- *Medium Municipal Separate Storm Sewer System* - all municipal separate storm sewers that meet one of the following criteria:
 1. located in an incorporated place with a population of 100,000 or more but less than 250,000, as determined by the latest Decennial Census by the Bureau of Census
 2. located in counties with unincorporated urbanized areas with a population greater than 100,000 but less than 250,000 according to the latest Decennial Census by the Bureau of Census
 3. other systems determined by the Department.
- *Mixing Zones* -
 1. for surface waters, a region of water below an outlet where the physical mixing of a discharge occurs in all directions until the constituents in the discharge have achieved uniform concentrations in the receiving water
 2. for groundwaters, a hydrogeologically controlled, three-dimensional flow path in the subsurface that constitutes the pathway for waste constituents to migrate from a source.
- *Monitoring Well* - any well used to obtain water samples for water quality analyses or to measure groundwater levels.
- *Municipal Separate Storm Sewer* - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) that are:
 1. owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, flood control district, drainage district, or similar entity, an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency that discharges to the state
 2. designed or used for collecting or conveying stormwater
 3. not a combined sewer
 4. not part of a POTW.
- *Natural Conditions* - water quality conditions unaffected by point and nonpoint sources or other sources of pollution.
- *National Pollutant Discharge Elimination System (NPDES)* - the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements.

- **New Discharger** - any building, structure, facility, or installation that meets the following standards:
 1. from which there is or may be a discharge of pollutants
 2. that did not commence the discharge of pollutants at a particular site prior to 13 August 1979
 3. that is not a new source
 4. that has never received a finally effective NPDES permit for discharges at that site.

The term includes an indirect discharger that commenced discharging into waters of the state after 13 August 1979.

- **New Source** - any building, structure, facility, or installation that there is or may be a discharge of pollutants, the construction commenced at either of the following times:
 1. after the promulgation of standards of performance under the CWA that are applicable to the source
 2. after proposal of standards of performance in accordance with the CWA that are applicable to the source but only if the standards are promulgated within 120 days of their proposal.
- **Nonconsumptive Use** - the use of water withdrawn from a groundwater system or aquifer in such a manner that it is returned to the same groundwater system or aquifer without substantial diminution in quantity or impairment in quality at or near the point from which it was withdrawn.
- **Other Wastes** - garbage, refuse, decayed wood, sawdust, shavings, bark, sand, clay, lime, cinders, ashes, offal, oil, gasoline, other petroleum products or by-products, tar, dye stuffs, acids, chemicals, dead animals, heated substances, and all other products, by-products, or substances not sewage or industrial waste.
- **Outlet** - the terminus of a sewer system or the point of emergence of any waterborne sewage, industrial waste, or other wastes, or the effluent therefrom, into the waters of the state.
- **Outstanding Recreational or Ecological Resource Waters** - water that is of exceptional recreational or ecological importance or of unusual value. These waters may include, but are not limited to, waters in national or state parks or wildlife refuges, waters supporting threatened or endangered species, waters under the *National Wild and Scenic Rivers Act* or *South Carolina Scenic Rivers Act*, waters known to be significant nursery areas for commercially important species or known to contain significant commercial or public shellfish resources, or waters used for or having significant value for scientific research and study.
- **Package Plant** - prefabricated factory assembled units and other modular type units designed for the treatment of wastewater through activated sludge processes and modifications thereof. Imhoff tanks are considered package plants.
- **Point Source** - any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation or vessel, or other floating craft, from which pollutants are or may be discharged. This does not include return flows from irrigated agriculture.

- **Pollutant** - dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water. It does not include the following:
 1. sewage from vessels
 2. water, gas, or other material that is injected into a state approved well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well.
- **Pollution** -
 1. the presence in the environment of any substance, including, but not limited to, sewage, industrial waste, other waste, air contaminant, or any combination thereof in quantity, characteristics, and duration that may cause the environment of the state to become contaminated, unclean, noxious, odorous, impure, or degraded; or is injurious to human health or welfare; or damages property, plant, animal, marine life, or use of property
 2. the manmade or man-induced alteration of the chemical, physical, biological, and radiological integrity of water.
- **Potable Water Well** - any well designed and/or constructed to produce potable water for consumption by humans or animals.
- **Primary Contact Recreation** - any activity with the intended purpose of direct water contact by the human body to the point of complete submergence, including, but not limited to, swimming, water skiing, and skin diving.
- **Privately Owned Treatment Works** - any device or system that is both used to treat wastes from any facility and is not a POTW.
- **Propagation** - the continuance of species through reproduction and growth in the natural environment as opposed to the maintenance of species by artificial culture and stocking.
- **Publicly Owned Treatment Works (POTW)** - any device or system used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature that is owned and operated by the state, a municipality, or a regional entity composed of two or more municipalities or parts thereof. The term also means the municipality that has jurisdiction over the indirect discharges to and the discharges from the a treatment works. This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.
- **Regional Administrator** - the Regional Administrator of Region IV of the USEPA or the authorized representative of the Regional Administrator.
- **Secondary Contact Recreation** - any activity occurring in or near the water that does not have an intended purpose of direct water contact by the human body to the point of complete submergence, including, but not limited to, fishing, boating, canoeing, and wading.
- **Sewage** - water-carried human or animal waste discharged, transmitted, and collected from residences, buildings, industrial establishments, or other places, and combined with such groundwater infiltration and surface water as may be present. The admixture with sewage of industrial wastes or other wastes are also considered sewage.

- *Sewage Sludge* - any solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced wastewater treatment, scum, septage, portable toilet pumpings, type III marine sanitation device pumpings, and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.
- *Sewage System or Sewerage System* - pipelines and conductors, pumping stations, force mains, and all other construction, devices and appliances appurtenant thereto used for conducting sewage, industrial waste, or other wastes to a point of ultimate discharge.
- *Shellfish Harvesting* - taking of bivalve mollusks, specifically clams, mussels, or oysters, for direct marketing or human consumption.
- *Source for Drinking Water Supply* - any source of surface water used for domestic consumption, or used in connection within the processing of milk, beverages, food, or for other purposes requiring finished water that meets the *Safe Drinking Water Act* (SDWA) requirements.
- *State* - the State of South Carolina.
- *Static Water Level* - the nonpumping water level in a well measured in feet below a fixed reference point, generally land surface.
- *Surface Water* - any water occurring on the surface of the earth, including water in rivers, streams, lakes, ponds, swamps, and other bodies of water.
- *Tidal Saltwaters* - waters with an elevation subject to changes due to oceanic tides and with a chloride ion content in excess of 250 mg/L (salinity = 0.48 parts per thousand).
- *Toxic Wastes* - wastes or combination of wastes including disease-causing agents that after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, may cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction), physical deformations, or restrict or impair growth in these organisms or their offspring.
- *Treatment Works* - any plant, disposal field, lagoon, constructed drainage ditch or surface water intercepting ditch, incinerator, area devoted to sanitary landfills, or other works installed for the purpose of treating, neutralizing, stabilizing, or disposing of sewage, industrial waste, or other wastes.
- *Underground Source of Drinking Water* (USDW) - an aquifer or its portion that either
 1. supplies any public water system
 2. contains a sufficient quantity of groundwater to supply a public water system and meets one of the following criteria:
 - a. currently supplies drinking water for human consumption
 - b. contains water with fewer than 10,000 mg/L total dissolved solids.
- *Upset* - an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

- *Vessel* - any contrivance used or capable of being used for navigation upon water, whether or not capable of self-propulsion, including foreign and domestic vessels engaged in commerce upon the waters of this state, passenger or other cargo carrying vessels, privately owned recreational watercraft, or any other floating craft.
- *Waste* - sewage, industrial waste, and other wastes.
- *Water Table* - the level below the land surface that all the voids are filled with water at atmospheric pressure.
- *Water Well* - any well designed and/or constructed to yield appreciable quantities of water.
- *Waters of the State or Waters* - lakes, bays, sounds, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic Ocean within the territorial limits of the state, and all other bodies of surface or underground water natural or artificial, public or private, inland or coastal, fresh or salt, that are wholly or partially within or bordering the state or within its jurisdiction.
- *Well* - any excavation that is cored, bored, drilled, jetted, dug, or otherwise constructed with a depth that is greater than its largest surface dimension.

CLEAN WATER ACT (CWA)
GUIDANCE FOR SOUTH CAROLINA CHECKLIST USERS

APPLICABILITY:	REFER TO CHECKLIST ITEMS:
All Installations	2-1
NPDES Permits	2-2 and 2-3
NPDES Reporting and Notification Standards	2-4 through 2-9
Stormwater Discharges	2-10
Pretreatment Standards	2-11
Publicly Owned Treatment Works (POTWs)	2-12 through 2-15
Industrial Users	2-15 through 2-22
Industrial Users with Hazardous Waste	2-23
Closeout of Wastewater Treatment Facilities	2-24
Surface Water and Groundwater Standards	2-25 through 2-33
Land Application of Sludge	2-34 through 2-37
Water Wells	2-38 through 2-41
Water Use	2-42 through 2-45
Underground Injection Wells	2-46 through 2-53

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
ALL INSTALLATIONS 2-1. Installations must not discharge into the environment without obtaining approval and a written permit (<i>Pollution Control Act</i> , Sections 48-1-90(a) and 48-1-110(a)).	<p>Verify that installations do not directly or indirectly throw, drain, run, allow to seep, or otherwise discharge into the environment of the state organic or inorganic matter, including sewage, industrial wastes, and other wastes, except in compliance with a permit issued by the Department.</p> <p>Verify that installations obtain approval from the Department and a written permit prior to doing any of the following:</p> <ul style="list-style-type: none"> -constructing or installing a disposal system or source -making any change in, addition to, or extension of any existing disposal system that would materially alter the method or the effect of treating or the disposing of sewage, industrial waste, or other wastes -operating a new disposal system, new source, or any existing disposal system or source -increasing the load through existing outlets of sewage, industrial waste, or other wastes into the waters of the state.
NPDES PERMITS 2-2. Installations that discharge pollutants from any point source into the waters of the state and waters of the United States must have a valid NPDES permit (NPDES Permits, Regulation 61-9 (NPR), Sections 61-9.122.1(b)(1), 61-9.122.1(b)(2), 61-9.122.3, 61-9.122.41(a), and 61-9.122.61(b)(3)).	<p>Determine if the installation meets any of the following criteria for discharges that are exempt from NPDES permit requirements:</p> <ul style="list-style-type: none"> - any discharge of sewage from vessels; effluent from properly functioning marine engines; laundry, shower, and galley sink wastes; or any other discharge incidental to the normal operation of a vessel, except for rubbish, trash, garbage, or other materials discharged overboard - any discharge of dredged or fill material into waters of the United States that are Federally regulated by the CWA - the introduction of sewage, industrial wastes, or other pollutants in publicly owned treatments by indirect dischargers - any discharge in compliance with the instruction of an on-scene coordinator - return flows from irrigated agriculture - discharges of pollutants into a privately-owned treatment works - any introduction of pollutants from nonpoint source agricultural and silvicultural activities, including runoff from orchards, cultivated crops, pastures, range lands, and forest lands, excluding discharges from any of the following: <ul style="list-style-type: none"> - concentrated animal feeding operations - discharges from concentrated aquatic animal production facilities - discharges to aquaculture projects - discharges from silvicultural point sources. <p>Verify that installations discharging pollutants into the waters and are not exempt have a valid NPDES permit.</p>

**COMPLIANCE CATEGORY:
CLEAN WATER ACT (CWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>2-2. (continued)</p>	<p>(NOTE: The Department may issue a general permit. The Department may require a discharge authorized by a general permit to apply for and obtain an individual NPDES or state permit.)</p> <p>Verify that installations with the following point sources have valid NPDES permits:</p> <ul style="list-style-type: none"> - concentrated animal feeding operations - concentrated aquatic animal production facilities - discharges into aquaculture projects - discharges of stormwater - silvicultural point sources. <p>Verify that all terms and conditions of the permit are met.</p> <p>Verify that the installation has Department approval prior to the transfer of any permit.</p>
<p>2-3. Installations with permitted discharges must meet recordkeeping standards (NPR, Sections 61-9.122.21(p) and 61-9.122.41(j)).</p>	<p>Verify that installations with NPDES permits keep all records of all data used to complete permit applications and any supplemental information submitted for a period of at least 3 yr from the date the application was signed.</p> <p>Verify that records of monitoring information required by the permit related to sewage sludge use and disposal activities are retained for a period of at least 5 yr.</p> <p>Verify that the installation retains the following records for a period of at least 3 yr from the date of the sample, measurement, report, or application:</p> <ul style="list-style-type: none"> - all monitoring information - all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation - copies of all reports required by the permit - records of all data used to complete the application for the permit. <p>Verify that the records of monitoring information include the following:</p> <ul style="list-style-type: none"> - the date, exact place, and time of sampling or measurements - the individual(s) who performed the sampling or measurements - the date(s) analyses were performed - the individual(s) who performed the analyses - the analytical techniques or methods used - the results of the analyses.

**COMPLIANCE CATEGORY:
CLEAN WATER ACT (CWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>NPDES REPORTING AND NOTIFICATION STANDARDS</p> <p>2-4. Installations with permitted discharges must meet operation and maintenance standards (NPR, Section 61-9.122.41(e)).</p> <p>2-5. Installations with permitted discharges must meet notification standards (NPR, Sections 61-9.122.41(1)(1), (1)(2), (1)(5), and 61-9.122.47(d)(1)).</p> <p>2-6. Installations with permitted discharges must meet reporting standards (NPR, Sections 61-9.122.41(1)(6) through (1)(8) and 61-9.122.44(i)(5)).</p>	<p>Verify that the installation properly operates and maintains all facilities and systems of treatment and control that are installed and used to achieve compliance.</p> <p>Verify that the installation notifies the Department as soon as possible of any of the following types of planned physical alterations or additions to the permitted facilities:</p> <ul style="list-style-type: none"> - an alteration or addition that meets the criteria for a new source - an alteration or addition that could significantly change the nature or increase the quantity of pollutants discharged - an alteration or addition that results in a significant change in sludge use or disposal practices and the alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit. <p>Verify that the installation notifies the Department in advance of any planned change to the permitted facility or activity that may result in noncompliance.</p> <p>Verify that reports of compliance or noncompliance with any progress reports on interim and final requirements contained in a compliance schedule are submitted no later than 14 days following each schedule date.</p> <p>Verify that installations not in compliance with applicable effluent standards or other requirements submit a report specifying compliance or noncompliance with the schedule within 10 days after an interim date or final date of compliance.</p> <p>Verify that any noncompliance that may endanger health or the environment is reported within 24 h and a written report submitted within 5 days of becoming aware of the circumstances.</p> <p>Verify that the written report includes the following:</p> <ul style="list-style-type: none"> - a description of the noncompliance and its cause - the period of noncompliance - if the noncompliance has not been corrected, the anticipated time the noncompliance is expected to continue - steps taken or planned to reduce, eliminate, and prevent recurrence of the non-compliance.

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
2-6. (continued)	<p>Verify that the 24-h report includes the following:</p> <ul style="list-style-type: none"> - any unanticipated bypass that exceeds effluent limitations in the permit - any upset that exceeds effluent limitations in the permit - violation of maximum daily discharge limitation for any of the pollutants listed by the Department in the permit to be reported within 24 h. <p>Verify that any other noncompliance not reported otherwise is reported when monitoring reports are submitted.</p> <p>Verify that installations aware of a failure to submit relevant facts in a permit application or have submitted incorrect information, promptly submit the relevant or corrected facts or information.</p> <p>Verify that installations with discharge permits not requiring annual submission of monitoring results report all instances of noncompliance at least annually.</p>
<p>2-7. Installations with permitted discharges that experience a bypass or an upset must meet reporting standards (NPR, Sections 61-9.122.41(m) and (n)).</p>	<p>(NOTE: Installations may allow a bypass to occur that does not violate effluent limitations provided it is for essential maintenance. These types of bypasses are not subject to notification requirements.)</p> <p>Verify that installations notify the Director at least 10 days prior to an anticipated bypass.</p> <p>Verify that installations with an unanticipated bypass meet 24-h reporting standards.</p> <p>Verify that installations with an upset meet 24-h reporting standards.</p>
<p>2-8. Permitted installations with existing manufacturing, commercial, mining, and silvicultural discharges and research facilities must meet additional notification standards (NPR, Section 61-9.122.42).</p>	<p>Verify that the installation notified the Department as soon as the installation knew or had reason to believe that any activity had or will result in the discharge on a routine or frequent basis of any toxic pollutant not limited in the permit if the discharge will exceed the highest of the following notification levels:</p> <ul style="list-style-type: none"> - 100 µg/L for any toxic pollutant not limited in the permit - 200 µg/L for acrolein and acrylonitrile - 500 µg/L for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol - 1 mg/L for antimony - five times the maximum concentration value reported for the pollutant on the permit application - a level established by the Department.

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
2-8. (continued)	<p>Verify that the installation notified the Department as soon as the installation knew or had reason to believe that any activity had or will result in the discharge on a non-routine or infrequent basis of any toxic pollutant not limited in the permit if the discharge will exceed the highest of the following notification levels:</p> <ul style="list-style-type: none"> - 500 µg/L for any toxic pollutant not limited in the permit - 1 mg/L for antimony - 10 times the maximum concentration value reported for the pollutant in the permit application - a level established by the Department.
<p>2-9. Installations with large or medium municipal separate storm sewer systems must meet reporting standards (NPR, Section 61-9.122.42(c)).</p>	<p>Verify that the following storm sewer systems submit an annual report on the anniversary of the issue date of the permit:</p> <ul style="list-style-type: none"> - large or medium municipal separate storm sewer systems - Department designated municipal separate storm sewer systems. <p>Verify that the annual report includes the following information:</p> <ul style="list-style-type: none"> - the status of implementing the components of the stormwater management program established as permit conditions - proposed changes to the stormwater management programs - a summary of data, including monitoring data accumulated through the reporting year - a summary describing the number and nature of enforcement actions, inspections, and public education programs - identification of water quality improvements or degradation.
<p>STORMWATER DISCHARGES</p>	
<p>2-10. Installations with specific types of stormwater discharges must meet permit standards (NPR, Sections 61- 9.122.26 (a)(1), (a)(3), 61-9.122.42(d), 61-9.122.44 (i)(3) and (i)(4)).</p>	<p>Verify that installations with any of the following discharges composed entirely of stormwater have a valid permit:</p> <ul style="list-style-type: none"> - a discharge with a permit issued prior to 4 February 1987 - discharges associated with industrial activity - discharges from a large or medium municipal separate storm sewer system - discharges determined by the Department or the USEPA Regional Administrator to require a NPDES permit. <p>(NOTE: After 1 October 1994, a permit may be required for other types of discharges composed entirely of stormwater. Conveyances that discharge stormwater runoff combined with a NPDES permitted municipal sewage point source is not required to obtain a stormwater discharge permit.)</p>

**COMPLIANCE CATEGORY:
CLEAN WATER ACT (CWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>2-10. (continued)</p>	<p>Verify that installations with permitted discharges composed entirely of stormwater meet the conditions of the permit no later than 3 yr after the issue date of the permit.</p> <p>Verify that installations with permitted stormwater discharges associated with industrial activity subject to an effluent limitation guideline report monitoring results at least once a year.</p> <p>Verify that installations with permitted stormwater discharges associated with industrial activities not subject to an effluent limitation meet the following monitoring standards:</p> <ul style="list-style-type: none"> - conduct an annual inspection and evaluation of the facility site to identify areas contributing to a stormwater discharge associated with industrial activity - maintain for a 3-yr period a record summarizing the results of the inspection, a certification that the facility is in compliance, and identifying any incidents of noncompliance. <p>Verify that installations with discharges from large or medium municipal separate stormwater systems have a valid permit.</p>
<p>PRETREATMENT STANDARDS</p> <p>2-11. Installations must not introduce pollutants into a POTW that causes pass through or interference (NPR, Sections 61-5.403 5(a)(1) and (b)).</p>	<p>Verify that the installation does not introduce pollutants into a POTW that cause pass through or interference.</p> <p>Verify that the installation does not introduce pollutants with the following characteristics into a POTW:</p> <ul style="list-style-type: none"> - pollutants that create a fire or explosion hazard in the POTW - pollutants that cause corrosive structural damage to the POTW - pollutants with a pH lower than 5.0 unless the POTW is specifically designed to accommodate this type of a discharge - solid or viscous pollutants in amounts that cause obstruction to the flow in the POTW and result in interference - any pollutant, including oxygen demanding pollutants (biological oxygen demand (BOD), etc.), released in a discharge at a flow rate and/or pollutant concentration that cause interference with the POTW - heat in amounts that inhibit biological activity in the POTW and result in interferences - heat in quantities that causes the temperature at the POTW treatment plant to exceed 104 °F (40 °C) without approval from the POTW and the approval authority - petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that cause interference or pass through - any trucked or hauled pollutants, except at POTW designated discharge points.

**COMPLIANCE CATEGORY:
CLEAN WATER ACT (CWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>PUBLICLY OWNED TREATMENT WORKS (POTW)</p> <p>2-12. Installations with specific types of POTW are required to meet POTW pretreatment program standards (NPR, Sections 61-9.403.8(a) through (c), 61-9.403.12 (i)).</p> <p>2-13. Installations with POTW must have Department approval prior to modifying their pretreatment program (NPR, Section 61-9.403.18(b)(2)).</p> <p>2-14. Installations with POTW must meet notification standards (NPR, Section 61-9.122.42(b)).</p>	<p>(NOTE: Approved pretreatment programs may be incorporated into NPDES permits. The Department may require POTW with a design flow of 5 mgd or less to have an approved POTW pretreatment program.)</p> <p>Determine if the installations has a POTW that meets either of the following criteria:</p> <ul style="list-style-type: none"> - a total design flow greater than 5 mgd and receives pollutants from industrial users that pass through or interfere with the operation of the POTW - are otherwise subject to pretreatment standards. <p>Verify that the POTW establishes a POTW pretreatment program within 1 yr after a written request from the Department.</p> <p>Verify that the POTW receives approval of the POTW pretreatment program.</p> <p>Verify that the POTW with approved pretreatment programs submit an annual report to the Department briefly describing the POTW's program activities.</p> <p>Verify that POTW notify the Department of any nonsubstantial modification to the pretreatment program at least 30 days prior to the modification.</p> <p>Verify that modifications to the POTW are not initiated prior to Department approval.</p> <p>Verify that the POTW provides adequate notice for the following:</p> <ul style="list-style-type: none"> - any new introduction of pollutants into the POTW from an indirect discharge that would be subject to Sections 301 or 306 CWA if it were directly discharging those pollutants - any substantial change in the volume or character of pollutants being introduced into the POTW by a source introducing pollutants into the POTW at the time of issue of the permit. <p>Verify that adequate notice includes the following information:</p> <ul style="list-style-type: none"> - the quality and quantity of effluent introduced into the POTW - any anticipated impact on the quantity or quality of effluent to be discharged from the POTW.

**COMPLIANCE CATEGORY:
CLEAN WATER ACT (CWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>2-15. Installations with a POTW must meet reporting standards (NPR, Sections 61-9.403.12 (k)(3) and (o)(3)).</p> <p>INDUSTRIAL USERS</p> <p>2-16. Industrial users must meet specific pretreatment standards (NPR, Section 61-9.403.5(e)).</p> <p>2-17. Installations with industrial users must meet specific notification standards (NPR, Sections 61-9.403.12(f), and (j)).</p> <p>2-18. Installations with industrial users must meet specific reporting standards (NPR, Sections 61-9.403.12(c)(3), (e)(1), and (h)).</p>	<p>Verify that the POTW receiving monitoring reports from an industrial user retain the reports for a minimum of 3 yr.</p> <p>Verify that the POTW with compliance schedules submit a progress report to the Department within 14 days following each date in the schedule and the final compliance date.</p> <p>Verify that industrial users do not increase the use of process water or in any other way attempt to dilute a discharge as a partial or complete substitute for adequate treatment unless it is expressly authorized.</p> <p>Verify that categorical and noncategorical industrial users notify the POTW immediately of all discharges that could cause problems to the POTW, including slug loadings.</p> <p>Verify that industrial users promptly notify the POTW in advance of any substantial change in the volume or character of pollutants in their discharge.</p> <p>(NOTE: Control Authority in these protocols refers to the POTW if the POTW has an approved pretreatment program, or the Department if the POTW does not have an approved pretreatment program.)</p> <p>Verify that industrial users with compliance schedules submit a progress report to the Control Authority within 14 days following each date in the schedule and the final compliance date.</p> <p>Verify that industrial users subject to categorical pretreatment standards submit to the Control Authority during the months of June and December a report indicating the nature and concentration of pollutants in the effluent that are limited by the categorical pretreatment standards unless more frequent reporting is required.</p> <p>Verify that significant noncategorical industrial users submit to the Control Authority at least once every 6 mo, a description of the nature, concentration, and flow of the pollutants required to be reported by the Control Authority.</p>

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
2-19. Installations with industrial users must meet recordkeeping standards (NPR, Sections 61-9.403.12(o)(1) and (2)).	Verify that industrial users submit the required reports. Verify that the industrial user and the POTW maintain records of all information resulting from any monitoring activities required. Verify that the following monitoring records are maintained for a minimum of 3 yr: <ul style="list-style-type: none"> - the date, exact place, method, and time of sampling - the name of the person(s) taking samples - the date analyses were performed - the person performing the analyses - the analytical techniques/methods used - the results of the analyses.
2-20. Installations with industrial users that experience an upset must take specific action (NPR, Section 61-9.403.16(c)).	Verify that industrial users notify the POTW and Control Authority within 24 h of becoming aware of an upset. Verify that industrial users who verbally notify the POTW and Control Authority within 24 h also submit a written report within 5 days. Verify that upset notifications include the following: <ul style="list-style-type: none"> - a description of the indirect discharge and cause of noncompliance - the period of noncompliance - steps being taken and/or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
2-21. Installations with industrial users that experience a bypass must take specific action (NPR, Section 61-9.403.17(c)).	(NOTE: Industrial users may allow bypasses that do not cause a violation of pretreatment requirements provided it is essential for maintenance to assure efficient operation. These types of bypasses are exempt from notification requirements.) Verify that industrial users notify the Control Authority at least 10 days prior to the date of an anticipated bypass. Verify that industrial users submit the following notices of an unanticipated bypass that exceeds applicable pretreatment standards to the Control Authority: <ul style="list-style-type: none"> - verbal notification within 24 h of becoming aware of the bypass - written notification within 5 days of becoming aware of the bypass.

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
2-21. (continued)	<p>Verify that the written notification includes the following:</p> <ul style="list-style-type: none"> - a description of the bypass and its cause - the duration of the bypass - if the bypass has not been corrected, the anticipated time the bypass is expected to continue - steps taken or planned to reduce, eliminate, and prevent recurrence of the bypass.
<p>2-22. Installations with industrial users who discover a violation must take specific action (NPR, Section 61-9.403.12 (g)(2)).</p>	<p>Determine if the industrial user has discovered a violation through sampling.</p> <p>Verify that the industrial user notified the Control Authority within 24 h of becoming aware of the violation.</p> <p>Verify that the industrial user performed a repeat sample and analysis and submitted the results of the repeat analysis to the Control Authority within 30 days unless either of the following conditions exists:</p> <ul style="list-style-type: none"> - the Control Authority performs sampling at the industrial users frequency of at least once per month - the Control Authority performs sampling between the time the user performs initial sampling and the time the user receives the results of the sampling.
<p>INDUSTRIAL USERS WITH HAZARDOUS WASTE</p>	
<p>2-23. Installations with industrial users that discharge hazardous waste to a POTW must meet notification standards (NPR, Section 61-9.403.12).</p>	<p>Determine if the installation has an industrial user that discharged hazardous waste to a POTW.</p> <p>Verify that the industrial user notified the POTW, the USEPA Regional Waste Management Division Director, and state hazardous waste authorities in writing of any hazardous waste discharge into the POTW.</p> <p>Verify that the notification includes the name of the hazardous waste, the USEPA hazardous waste number, and the type of discharge.</p> <p>Verify that, if the industrial user discharges more than 100 kg of the hazardous waste per calendar month to the POTW, notification additionally includes the following:</p> <ul style="list-style-type: none"> - an identification of the hazardous constituents contained in the wastes - an estimation of the mass and concentration of the constituents in the waste stream discharged during the calendar month - an estimate of the mass of constituents in the waste stream expected to be discharged during the following 12 mo.

**COMPLIANCE CATEGORY:
CLEAN WATER ACT (CWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>2-23. (continued)</p>	<p>Verify that all notification takes place within 180 days of 23 April 1993 or within 180 days after the discharge.</p> <p>Verify that industrial users required to meet the notification requirements have a program in place to reduce the volume and toxicity of hazardous wastes generated to the degree it is economically practical.</p> <p>(NOTE: Dischargers are exempt during a calendar month in which they discharge no more than 15 kg of hazardous waste unless the wastes are acute hazardous wastes.)</p> <p>(NOTE: In the case of any new Federal regulations identifying additional characteristics or substances as hazardous waste, the industrial user must notify the POTW, the USEPA Regional Waste Management Waste Division Director, and state hazardous waste authorities of the discharge of the substance within 90 days of the effective date of the regulation.)</p>
<p>CLOSEOUT OF WASTEWATER TREATMENT FACILITIES</p>	
<p>2-24. Installations with wastewater treatment facilities must meet closeout standards (DHEC, Proper Closeout of Wastewater Treatment Facilities, Regulation 61-82, Sections II through V).</p>	<p>Verify that installations obtain written permission from the DHEC prior to a lagoon closeout.</p> <p>Verify that a lagoon closeout meets the following requirements:</p> <ul style="list-style-type: none"> - lagoons are drained from the surface - after treated sewage is drained from the lagoon, solid accumulation on the bottom is allowed to dry - dried solids mixed with soil and left on the bottom of the lagoon are removed for disposal in an approved landfill, or disposed of in some other approved manner. <p>(NOTE: Waste treatment facilities not defined as lagoons or package plants must undergo closeout in accordance with guidelines issued by the DHEC on an individual basis.)</p> <p>Verify that installations which closeout waste treatment facilities have prior authorization from the DHEC.</p> <p>Verify that installations which complete the closeout of a waste treatment facility requested a DHEC inspection and receive a written approval.</p>

**COMPLIANCE CATEGORY:
CLEAN WATER ACT (CWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>2-24. (continued)</p>	<p>Verify that the installation provides the following security arrangements:</p> <ul style="list-style-type: none"> - for package plant closeouts until the electrical power is disconnected, the plant is removed from the premises, and the resulting depression is filled - for all other waste treatment facilities, all areas around the facilities are secured until closeout has been accomplished.
<p>SURFACE WATER AND GROUNDWATER STANDARDS</p> <p>2-25. Groundwaters and surface waters of the state must meet general standards (WCS, Regulation 61-68, Sections E(2), (4), and (5)).</p>	<p>(NOTE: Surface waters of the state are identified as one of the following: Outstanding Resource Waters (ORW), Trout Waters, Freshwaters, Shellfish Harvesting Waters, Tidal Saltwaters (SA), or Tidal Saltwaters (SB). Groundwater is classified as GA, GB, or GC.)</p> <p>Verify that all groundwaters and surface waters of the state are at all times, regardless of flow, free from the following:</p> <ul style="list-style-type: none"> - sewage, industrial waste, or other waste which settles to form sludge deposits that are unsightly, putrescent, or odorous that create a nuisance, or interference with classified water uses or existing water uses - floating debris, oil, grease, scum, and other floating material attributable to sewage, industrial waste, or other waste in unsightly amounts that create a nuisance, or interfere with classified water uses or existing water uses - sewage, industrial, or other waste that produce taste or odor or change the existing color or physical, chemical, or biological conditions in the receiving water or aquifers to the degree of creating a nuisance, or interference with existing uses or classified water uses (except within mixing zones) - high temperature, toxic, corrosive, or deleterious substances attributable to sewage, industrial waste, or other waste in concentrations or combinations that interfere with classified water uses (except within mixing zones), existing water uses, or is harmful to human, animal, plant, or aquatic life. <p>Verify that installations that discharge fill into state waters result in no significant degradation of the aquatic ecosystem or water quality.</p> <p>Verify that installations with waste treatment facilities do not discharge directly to lakes unless the nutrient level discharged does not adversely affect water quality conditions and maintains classified and existing uses.</p>

**COMPLIANCE CATEGORY:
CLEAN WATER ACT (CWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>2-26. Installations that discharge heated liquids must meet receiving surface water temperature standards (WCS, Regulation 61-68, Section E(6)).</p>	<p>Determine if the installation discharges heated liquids to surface waters.</p> <p>Verify that the discharge does not increase the temperature of free flowing waters classified as Freshwaters by more than 5 °F (2.8 °C) above natural temperature conditions or exceed a maximum of 90 °F (32.2 °C) unless otherwise approved.</p> <p>Verify that the discharge does not increase the weekly average water temperature of Shellfish Harvesting, Class SA and Class SB surface waters by either of the following amounts unless otherwise approved:</p> <ul style="list-style-type: none"> - more than 4 °F (2.2 °C) above natural conditions during the fall, winter, or spring - 1.5 °F (0.8 °C) above natural conditions during the summer. <p>Verify that the discharge does not increase the weekly average water temperature of surface waters classified as Freshwaters that are lakes or reservoirs more than 5 °F (2.8 °C) above natural conditions or exceed 90 °F (32.3 °C) unless otherwise approved.</p>
<p>2-27. Installations with freshwaters or saltwaters that constitute an ORW must meet specific water protection standards (WCS, Regulation 61-68, Section F(1)).</p>	<p>Determine if the installation has freshwaters or saltwaters that constitute an outstanding recreational or ecological resource or those freshwaters suitable as a source for drinking water and classified as ORW waters.</p> <p>Verify that the installation does not discharge the following into Class ORW waters:</p> <ul style="list-style-type: none"> - discharges from domestic, industrial, or agricultural waste treatment facilities - open water dredged spoil disposal - dumping or disposal of garbage, cinders, ashes, oils, sludge, or other refuse. <p>Verify that installations with stormwater and other nonpoint source runoff into Class ORW waters, including runoff from agricultural uses or permitted discharges from aquaculture facilities, maintain water quality necessary for the existing and classified uses.</p> <p>Verify that installations with activities or discharges from waste treatment facilities in waters upstream or tributary to ORW waters maintain water quality necessary for existing and classified uses.</p>
<p>2-28. Installations with waters classified as Trout Waters must meet specific water protection standards (WCS, Regulation 61-68, Section F(2)).</p>	<p>Determine if the installation has any of the following trout waters:</p> <ul style="list-style-type: none"> - Natural (NT) - Put, Grow, and Take (TPGT) - Put and Take. <p>Verify that installations with Trout Waters classified as Put and Take Trout Waters meet the standards for Freshwaters.</p>

**COMPLIANCE CATEGORY:
CLEAN WATER ACT (CWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
2-28. (continued)	<p>Verify that the installation does not discharge garbage, cinders, ashes, oils, sludge, or other refuse into waters classified as NT and TPGT.</p> <p>Verify that the installation does not discharge treated wastes, toxic wastes, deleterious substances, colored, or other wastes alone or in combination with other substances or wastes in sufficient amounts to cause any of the following:</p> <ul style="list-style-type: none"> - injury to reproducing trout populations in NT waters or stocked populations in TPGT waters - adversely affect the taste, color, odor, or sanitary conditions - impair the waters for any other best usage as determined for the specific waters. <p>Verify that the installation meets the following standards for NT and TPGT waters:</p> <ul style="list-style-type: none"> - dissolved oxygen is not less than 6 mg/L - fecal coliform does not exceed a geometric mean of 200/100 mL based on five consecutive samples during any 30-day period - no more than 10 percent of the total samples for fecal coliform during any 30-day period exceed 400/100 mL - pH is between 6.0 and 8.0 - temperature does not vary from levels existing under natural conditions unless some other temperature will protect the classified uses - turbidity does not exceed 10 percent above natural conditions provided existing uses are maintained.
<p>2-29. Installations with waters classified as Freshwaters must meet specific water protection standards (WCS, Regulation 61-68, Section F(3)).</p>	<p>Determine if the installation has any waters classified as Freshwaters.</p> <p>Verify that the installation does not discharge garbage, cinders, ashes, sludge, or other refuse into waters classified as Freshwaters.</p> <p>Verify that the installation does not discharge treated wastes, toxic wastes, deleterious substances, or colored or other wastes alone or in combination with other substances or wastes in sufficient amounts to cause any of the following:</p> <ul style="list-style-type: none"> - waters that are unsafe or unsuitable for primary contact recreation - impairment of the waters for any other best usage as determined for the specific waters.

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
2-29. (continued)	<p>Verify that the installation meets the following standards for Freshwaters:</p> <ul style="list-style-type: none"> - the dissolved oxygen daily average is not less than 5.0 mg/L with a low of 4.0 mg/L - fecal coliform does not to exceed a geometric mean of 200/100 mL based on five consecutive samples during any 30-day period - no more than 10 percent of the total samples for fecal coliform during any 30-day period exceed 400/100 mL - pH is between 6.0 and 8.5.
<p>2-30. Installations with waters classified as Shellfish Harvesting (SFH) Waters must meet specific water protection standards (WCS, Regulation 61-68, Section F(4)).</p>	<p>Determine if the installation has any waters classified as SFH Waters.</p> <p>Verify that the installation does not discharge garbage, cinders, ashes, sludge, or other refuse into SFH Waters.</p> <p>Verify that the installation does not discharge treated wastes, toxic wastes, deleterious substances, colored, or other wastes alone or in combination with other substances or wastes in sufficient amounts to cause any of the following:</p> <ul style="list-style-type: none"> - adversely affect the taste, color, odor, or sanitary conditions of clams, mussels, or oysters for human consumption - impairment of the waters for any other best usage as determined for the specific waters. <p>Verify that the installations meets the following standards for SFH waters:</p> <ul style="list-style-type: none"> - the dissolved oxygen daily average is not less than 5.0 mg/L with a low of 4.0 mg/L - fecal coliform does not to exceed an Most Probable Number (MPN) median of 14/100 mL - no more than 10 percent of the samples for fecal coliform exceed an MPN of 43/100 mL where all tests are made using the five tube dilution method - the pH does not vary more than 0.3 of a pH unit above or below that of effluent-free waters in the same geological area having a similar total salinity, alkalinity and temperature - the pH is not lower than 6.0 or above 8.5.

**COMPLIANCE CATEGORY:
CLEAN WATER ACT (CWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>2-31. Installations with waters classified as Tidal Saltwaters SA suitable for primary and secondary contact recreation must meet specific water protection standards (WCS, Regulation 61-68, Section F(5)).</p>	<p>Determine if the installation has any waters classified as Class SA.</p> <p>Verify that the installation does not discharge garbage, cinders, ashes, sludge, or other refuse into SA Waters.</p> <p>Verify that the installation does not discharge treated wastes, toxic wastes, deleterious substances, colored, or other wastes alone or in combination with other substances or wastes in sufficient amounts to cause any of the following:</p> <ul style="list-style-type: none"> - waters that are unsafe or unsuitable for primary contact recreation - impairment of the waters for any other best usage as determined for the specific waters. <p>Verify that the installations meets the following standards for Class SA Waters:</p> <ul style="list-style-type: none"> - the dissolved oxygen daily average is not less than 5.0 mg/L with a low of 4.0 mg/L - fecal coliform does not to exceed a geometric mean of 200/100 mL, based on five consecutive samples during any 30-day consecutive period - no more than 10 percent of the total samples for fecal coliform during any 30-day period exceed 400/100 mL - the pH does not vary more than 0.5 of a pH unit above or below that of effluent-free waters in the same geological area having a similar total salinity, alkalinity, and temperature - the pH is not lower than 6.5 or above 8.5.
<p>2-32. Installations with waters classified as Tidal Saltwaters SB waters must meet specific water protection standards (WCS, Regulation 61-68, Section F(6)).</p>	<p>Determine if the installation has any tidal saltwaters suitable for primary and secondary contact recreation, crabbing, and fishing, except harvesting of clams, mussels, or oysters for market purposes or human consumption classified as Class SB.</p> <p>Verify that the installation does not discharge garbage, cinders, ashes, sludge, or other refuse into SB Waters.</p> <p>Verify that the installation does not discharge treated wastes, toxic wastes, deleterious substances, colored, or other wastes alone or in combination with other substances or wastes in sufficient amounts to cause any of the following:</p> <ul style="list-style-type: none"> - amounts harmful to the survival, culture, or propagation of marine fauna and flora. - adverse affects on the taste, color, odor, or sanitary condition of fish for human consumption - waters that are unsafe or unsuitable for primary contact recreation - impairment of the waters for any other best usage as determined for the specific water.

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
2-32. (continued)	<p>Verify that the installations meets the following standards for Class SB Waters:</p> <ul style="list-style-type: none"> - dissolved oxygen is not less than 4.0 mg/L - fecal coliform does not to exceed a geometric mean of 200/100 mL, based on five consecutive samples during any 30-day consecutive period - no more than 10 percent of the total samples for fecal coliform during any 30-day period exceed 400/100 mL - the pH does not vary more than 0.5 of a pH unit above or below that of effluent-free waters in the same geological area having a similar total salinity, alkalinity, and temperature - the pH is not lower than 6.5 or above 8.5.
2-33. Installations must meet specific groundwater protection standards (WCS, Regulation 61-68, Section G).	<p>Verify that installations do not discharge treated wastes, toxic wastes, deleterious substances, or other constituents into groundwater classified as GA.</p> <p>Verify that installations with groundwaters classified as GB meet the state Primary Drinking Water standards for inorganic and organic chemicals.</p> <p>Verify that installations with groundwaters classified as GB do not discharge any of the following in concentrations or amounts that interfere with use, actual or intended as determined by the Department:</p> <ul style="list-style-type: none"> - manmade radionuclides - priority pollutant volatile organic compounds - pesticides and herbicides - polychlorinated biphenyls (PCB) - any other synthetic organic compounds, treated wastes, thermal wastes, deleterious substances, or colored or other wastes or constituents. <p>Verify that installations with groundwaters classified as GC do not discharge treated wastes, toxic wastes, deleterious substances, or other constituents that interfere with any existing use of an underground source of drinking water.</p>
LAND APPLICATION OF SLUDGE	
2-34. Installations with sludge land application sites must have a valid permit (Land Application of Sludge Guidance Manual).	<p>Determine if the installation has a land application site that meets one of the following categories:</p> <ul style="list-style-type: none"> - Category 1, land application sites owned by the generator of the sludge - Category 2, agricultural land application sites - Category 3, forest land application sites - Category 4, land reclamation sites.

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
2-34. (continued)	<p>Verify that installations which construct or operate a land application site have a valid permit.</p>
2-35. Installations with sludge land application sites must meet specific health and safety standards (Land Application of Sludge Guidance Manual).	<p>Verify that installations which dispose of industrial sludge by land application have obtained prior approval from the South Carolina DHEC.</p> <p>Verify that installations treat sewage sludge and septage that contains human waste by a Process to Significantly Reduce Pathogens (PSRP) prior to land application.</p> <p>Verify that installations treat sewage and sludge by a Process to Further Reduce Pathogens (PFRP) prior to land application or incorporation of sludge if crops for direct human consumption are to be grown within 18 mo subsequent to application or incorporation.</p> <p>(NOTE: Federal regulations detail a number of processes listed as PSRP and PFRP.)</p> <p>Verify that installations control access to the site as follows:</p> <ul style="list-style-type: none"> - public access controlled for 12 mo after cessation of final land application - grazing animals whose products are consumed by humans are prevented access for 1 mo after cessation of final land application - lactating dairy animals are prevented from grazing on sludge amended pastures for at least 1 mo after the last sludge application. <p>Verify that crops for human consumption are not planted on the site for at least 18 mo after the last sludge application.</p> <p>(NOTE: Crops for direct human consumption refer to crops that are consumed by humans without processing to minimize pathogens prior to distribution to the consumer.)</p>
2-36. Installations with sludge land application sites must meet specific monitoring and record-keeping standards (Land Application of Sludge Guidance Manual).	<p>Verify that the treatment plant operator maintains the following records for each application site:</p> <ul style="list-style-type: none"> - a map of the site - soil tests - volume and characteristics of sludge applied - a cumulative summary - the dates of application - the number of acres on which the sludge was applied. <p>Verify that maintained records include dates and location of samples and results for soil and groundwater tests.</p> <p>Verify that the installation conducts an annual Extraction Procedure (EP) toxicity analysis on the sludge unless otherwise required by the Department.</p>

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
2-37. Installations that market sludge without restrictions must meet specific sludge standards (Land Application of Sludge Guidance Manual).	Verify that installations which market sludge without restrictions meet the following sludge standards, unless otherwise determined by the Department: <ul style="list-style-type: none"> - high quality sludges are treated by a PFRP when human or animal wastes are present - nonhazardous sludge does not exceed the following concentrations: <ul style="list-style-type: none"> - 20 mg/kg (0.04 lb/ton) for cadmium - 700 mg/kg (1.4 lb/ton) for copper - 650 mg/kg (1.3 lb/ton) for lead - 150 mg/kg (0.3 lb/ton) for nickel - 1525 mg/kg (3.05 lb/ton) for zinc - 10 mg/kg (0.02 lb/ton) for PCB.
WATER WELLS 2-38. Installations with water wells must meet specific safety standards (SCWSR, R.61-71.6(F) through (H) and R.61-71.9).	Determine if the installation has any water wells. Verify that wells that use a chemical feed system for any purpose other than water treatment have an approved backflow prevention device. Verify that potable water wells upon completion of construction, maintenance, repair, pump installation, or testing are disinfected to achieve the following: <ul style="list-style-type: none"> - a chlorine residual of 50 ppm for a minimum of 4 h - chlorine is uniformly distributed in the well - the well is flushed sufficiently after disinfection to remove all traces of the disinfectant. Verify that wells are labeled with durable, weatherproof, rust-proof, metal, or equivalent material and secured to the well so that the label is readily visible. Verify that labels and wells contain the following information: <ul style="list-style-type: none"> - drilling contractor and driller certification - date well was completed - total depth - casing depth and inside diameter - screen intervals - yield expressed in gallons per minute or specific capacity expressed in gallons per minute per foot of drawdown - static water level and date measured. Verify that wells are operated and maintained at all times in a manner so as to protect underground sources of drinking water from contamination.

**COMPLIANCE CATEGORY:
CLEAN WATER ACT (CWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
2-38. (continued)	<p>Verify that prior to putting in service, a well is sealed with a water-tight cap or seal.</p> <p>(NOTE: The installation may be required to provide additional security against vandalism.)</p>
<p>2-39. Installations with water wells must meet reporting standards (SCWSR, R.61-71.8).</p>	<p>Verify that installations or contractors who construct water wells submit to the Department a water well record within 30 days of completion of any well.</p> <p>Verify that wells meeting the following criteria submit a water-well record:</p> <ul style="list-style-type: none"> - wells that do not yield usable quantities of water - wells to be abandoned - test holes or exploratory holes for water as well as the method for abandonment - dewater wells that produce greater than 70 gpm.
<p>2-40. Installations with water wells must meet abandonment standards (SCWSR, R.61-71.10).</p>	<p>Verify that any well temporarily removed from service is sealed with a water-tight cap or seal.</p> <p>Verify that the well is maintained so it is not a source or channel of contamination during temporary abandonment.</p> <p>Verify that wells permanently abandoned meet the following criteria:</p> <ul style="list-style-type: none"> - any well that acts as a source of contamination is repaired or permanently abandoned immediately after receipt of notice from the Department - wells are filled with sand or gravel to within 20 ft of the surface and the remainder is filled with cement grout only - bored wells are filled with cement grout or compacted clay - abandonment procedure is by forced injection of grout or pouring through a tremie pipe starting at the bottom and proceeding to the surface in one continuous operation.
<p>2-41. Installations with monitoring wells must meet specific standards (SCWSR, R.61-71.11(C)(6), (C)(7), and (E) through (H)).</p>	<p>Verify that all monitoring wells have a locking cap or other security devices to prevent damage and/or vandalism.</p> <p>Verify that destroyed, unusable, or abandoned monitoring wells are reported to the Department and properly abandoned, revitalized, or replaced.</p> <p>Verify that installation has obtained approval from the Department prior to the construction of a monitoring well.</p> <p>Verify that the installations submits a monitoring well record to the Department within 30 days after completion of the well.</p>

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
2-41. (continued)	<p>Verify that the monitoring well record includes the following:</p> <ul style="list-style-type: none"> - name and address of facility - well location - driller and certification number - date drilled - driller's or geologist's log - total depth - screened interval - diameter and construction details - depth to water table and date and time measured - surveyed elevation of measuring point with respect to an established benchmark. <p>(NOTE: Monitoring wells that are constructed and submit reports to satisfy a permit or other regulatory requirements are not required to submit this additional monitoring well record.)</p> <p>Verify that monitoring wells are disinfected and abandoned according to water well standards.</p>
WATER USE	
2-42. Installations that use 100,000 gal or more of water per day on any day must submit a water use report (WRC, Sections 121-10.3 and 121-10.5).	<p>Determine if the installation uses, diverts, withdraws, obtains, discharges, or returns 100,000 gal or more of water per day on any day.</p> <p>(NOTE: Mere diversions of surface water need not be reported if the diversion is in a channel, cut, or canal adjacent to and contiguous with the surface water source from which the diversion originates.)</p> <p>Verify that the installation submits a water use report except for agricultural quarterly and no later than 30 April, 30 July, 30 October, and 30 January.</p> <p>(NOTE: During periods of extremely low stream flow, the Commission may require monthly reports.)</p> <p>Verify that agricultural water use reports are submitted through the Clemson University Cooperative Extension Service no later than 30 January of the year next following the reporting period.</p> <p>Verify that the water use report contains the following information:</p> <ul style="list-style-type: none"> - site or facility locations - number, depth, and locations of any wells or underground sources of water - source and location of any intake, withdrawal, diverted, or returned water - the capacity and locations of any intake, withdrawal, or diversion pumps or structures

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
2-42. (continued)	<ul style="list-style-type: none"> - water storage and treatment capacity - the total amount of water used during the reporting period and the maximum daily use within each month of the period - general nature of the use made of the water. <p>Verify that installations which store or recycle water before return or discharge submit only a report for the initial withdrawal, diversion, or obtainment and ultimate discharge.</p>
<p>2-43. Installations that withdraw, obtain, or utilize groundwater within the boundaries of the Low Country Capacity Use Area or the Waccamaw Capacity Use Area must meet specific permit and reporting standards (WRC, Chapter 121, Sections 121-1.3, 121-1.8, 121-1.9, 121-2.3, 121-2.8, and 121-2.9).</p>	<p>Determine if the installation withdraws, obtains, or utilizes groundwater within the boundaries of the Low Country Capacity Use Area or the Waccamaw Capacity Use Area.</p> <p>Verify that installations which use 100,000 gal or more of groundwater per day have a valid groundwater use permit.</p> <p>Verify that installations which use less than 100,000 gal of groundwater per day submit the following:</p> <ul style="list-style-type: none"> - a written notice of intent to drill a well 30 days prior to the start of drilling activities - a water well report within 30 days after completing the well. <p>Verify that installations with water use permits submit a quarterly water use report which includes the following:</p> <ul style="list-style-type: none"> - permit holder and number - groundwater use - source of groundwater - quantity of water used or withdrawn monthly from each well - the average hours pumped per day - the static pumping levels of each well utilized and the date the water levels were measured - for nonconsumptive use, the amount of water returned to the aquifer(s) from which the water is withdrawn. <p>Verify that installations with water use permits measure water levels weekly during each month of the reporting period on days specified by the Commission.</p> <p>Verify that installations which withdraw in excess of 100,000 gal of groundwater per day for the purpose of dewatering and are not required to obtain a permit meet the following standards:</p> <ul style="list-style-type: none"> - subsurface rock or sediments are dewatered to a depth of not more than 20 ft or a depth approved by the Commission - the Commission is notified in writing prior to dewatering

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
2-43. (continued)	<ul style="list-style-type: none"> - water withdrawn for a period of not more than 60 days unless otherwise approved by the Commission - area dewatered for the purpose of construction of trenches, for sewer or water pipes, or excavation for foundations or utility construction.
2-44. Installations that drill a test or exploration well for the purpose of obtaining geologic and/or hydrologic information in the Low Country Capacity Use Area or the Waccamaw Capacity Use Area must have a valid permit (WRC, Chapter 121, Sections 121-1.13 and 121-2.13).	<p>Determine if the installation has test or exploration wells for the purpose of obtaining geologic and/or hydrologic information in the Low Country Capacity Use Area or the Waccamaw Capacity Use Area.</p> <p>Verify that the installation has a valid permit to drill a well.</p> <p>Verify that test and exploratory wells drilled and not developed for groundwater use or observation wells are filled, plugged, and sealed in compliance with well abandonment requirements.</p> <p>Verify that wells without pumps determined not to be abandoned are covered with a secure cap when they are not being used as observation wells or for other purposes.</p>
2-45. Installations with any existing wells that have been abandoned must meet specific standards (WRC, Chapter 121, Sections 121-1.14 and 121-2.14).	<p>Determine if the installation has any existing wells for permitted groundwater use, test exploration, or observation wells that meet the following abandonment standards:</p> <ul style="list-style-type: none"> - abandoned and no longer put to beneficial use - deemed by the Commission to have an unreasonable adverse or potentially unreasonable adverse effect on other water users or may result in physical or chemical impairment of the aquifer(s). <p>Verify that the installation fills, plugs, and seals the well.</p> <p>Verify that the Commission is notified by a certified statement within 30 days of the well being sealed.</p>

**COMPLIANCE CATEGORY:
CLEAN WATER ACT (CWA)
South Carolina Supplement**

**REGULATORY
REQUIREMENTS:**

REVIEWER CHECKS:

**UNDERGROUND
INJECTION WELLS**

2-46. Installations that inject fluids to the subsurface or groundwater must meet specific standards (Underground Injection Control Regulations (UICR), R61-87.4, 87.5, 87.13, 87.11(A)(2), and 87.11(F)(2)).

2-47. Installations that have an authorization by rule to operate a Class V.B. injection well must meet specific reporting standards (UICR, R61-87.11(F)(3)).

(NOTE: See Appendix 2-1 for explanations of injection well classifications.)

Verify that installations that inject fluids to the subsurface or groundwater of the state by means of an injection well have a valid authorization by a Department permit or rule.

Verify that the movement of fluids containing wastes or contaminants into USDW as a result of injection is prohibited if the presence of the waste or contaminant:

- may cause a violation of any drinking water standard
- may otherwise adversely affect the health of persons.

Verify that the installation does not construct, operate, or use a Class I or IV well for injection.

Verify that installations that construct, operate or use a Class II, III, or V.A. well for injection have a valid permit.

(NOTE: Class V.B. injection wells do not require a permit but are authorized by rule.)

Determine if the installations has an authorization by rule to operate a Class V.B. injection well.

Verify that installations with existing Class V.B. wells have submitted a report to the Department and new wells have submitted a report within 30 days.

Verify that the submitted Class V.B. report includes the following information:

- facility name and location
- name and mailing address of facility
- nature and type of injection facility and well
- operating status of the injection facility and well.

**COMPLIANCE CATEGORY:
CLEAN WATER ACT (CWA)
South Carolina Supplement**

**REGULATORY
REQUIREMENTS:**

2-48. Installations with permitted Class II, III or V.A. injection wells must meet minimum monitoring standards (UICR, R61-87.9, R61-87.14(F) and (G)).

REVIEWER CHECKS:

Verify that installations with permitted Class II injection wells meet the following minimum monitoring standards:

- monitor the nature of injected fluids at time intervals sufficiently frequent to yield data representative of their characteristics
- observe injection pressure, flow rate, and cumulative volume at the following frequencies:
 - weekly for produced fluid disposal operations
 - monthly for enhanced recovery operations
 - daily during the injection of liquid hydrocarbons and injection for withdrawal of stored hydrocarbons
 - daily during the injection phase of cyclic steam operations; recording of one observation of injection pressure, flow rate and cumulative volume at reasonable intervals no greater than 30 days
- demonstrate mechanical integrity once every 5 yr during the life of the injection wells
- maintenance of the results of all monitoring.

Verify that installations with permitted Class III or V.A. injection wells meet the following minimum monitoring standards:

- complete an appropriate number of monitoring wells in the injection zone and into any USDW that could be affected by the operation
- monitor the nature of injected fluids with sufficient frequency to yield representative data on their characteristics
- monitor injection pressure and either flow rate or volume semi-monthly, or metering and daily recording of injected and produced fluid volumes as appropriate
- demonstrate mechanical integrity once every 5 yr during the life of the well
- monitor the fluid level in the injection zone semi-monthly, where appropriate
- monitor the parameters chosen to measure water quality in the monitoring wells semi-monthly.

(NOTE: The Department may allow monitoring on a field or project basis rather than on an individual well basis by manifold monitoring.)

Verify that installations ensure the mechanical integrity of Class II and III injection wells by meeting the following monitoring standards:

- determine the absence of any measurable leak in the casing, tubing, or packer by either monitoring of the annulus pressure or a pressure test with liquid or gas
- determine the absence of any measurable fluid movement into USDW by maintaining a temperature or noise log.

COMPLIANCE CATEGORY: CLEAN WATER ACT (CWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
2-49. Installations with permitted injection wells must meet well operating standards (UICR, R61-87.14(E)).	<p>Verify that installations with permitted injection wells meet the following well operating standards:</p> <ul style="list-style-type: none"> - injection pressure at the well head does not initiate new fractures or propagate existing fractures in the confining zone adjacent to the USDW - injection pressure does not cause the movement of injection or formation fluids into an USDW - there are no injections between the outermost casing protecting USDW and the well bore.
2-50. Installation with permitted injection wells must meet specific recordkeeping and notification standards (UICR, R61-87.13(X)(3), (X)(4), (CC), and R61-87.14(D)).	<p>Verify that the installation notify the Department as soon as possible of any planned physical alterations or additions to the permitted injection well.</p> <p>Verify that installations with permitted injection wells give advance notice to the Department of any planned changes in the permitted facility or activity that may result in noncompliance.</p> <p>Verify that the installation retains copies of the following records for a period of at least 3 yr from the date of the sample, measurement, report, or application:</p> <ul style="list-style-type: none"> - all monitoring information, including a) calibration and maintenance records - original strip chart recordings for continuous monitoring instrumentation - copies of all reports required by the permit. <p>Verify that the records of monitoring information include the following:</p> <ul style="list-style-type: none"> - the date, exact place, and time of sampling or measurements - the individual who performed the sampling or measurements - the date analyses were performed - the individual who performed the analyses - the analytical techniques or methods used - the results of sampling, measurements, and analyses. <p>Verify that the records concerning the nature and composition of injected fluids are retained until 5 yr after the completion of any plugging and abandonment.</p> <p>Verify that the installation determines or calculates the following concerning the injection formation:</p> <ul style="list-style-type: none"> - fluid pressure - estimated fracture pressure - physical and chemical characteristics of the injection zone.

**COMPLIANCE CATEGORY:
CLEAN WATER ACT (CWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:

REVIEWER CHECKS:

2-51. Installations with permitted injection wells must meet reporting standards (UICR, R61-87.14(H) and (I)).

Verify that installations with permitted Class III and Class V.A. injection wells meet the following reporting standards:

- quarterly reporting on required monitoring
- results of mechanical integrity and any other periodic test required by the Department reported in the first regular quarterly report after the completion of the test.

Verify that installations with permitted Class II injection wells submit a quarterly report that summarizes the results of monitoring including:

- monthly records of injected fluids
- any major changes in characteristics or sources of injected fluid.

Verify that the results of mechanical integrity tests conducted on Class II and III injection wells are reported to the Department.

- Verify that installations with permitted Class III and Class V.A. injection wells meet the following reporting standards:**
- quarterly reporting on required monitoring
 - results of mechanical integrity and any other periodic test required by the Department reported in the first regular quarterly report after the completion of the test.
- Verify that installations with permitted Class II injection wells submit a quarterly report that summarizes the results of monitoring including:**
- monthly records of injected fluids
 - any major changes in characteristics or sources of injected fluid.
- Verify that the results of mechanical integrity tests conducted on Class II and III injection wells are reported to the Department.**

Verify that installations with permitted Class II injection wells submit a quarterly report that summarizes the results of monitoring including:

- monthly records of injected fluids
- any major changes in characteristics or sources of injected fluid.

Verify that the results of mechanical integrity tests conducted on Class II and III injection wells are reported to the Department.

- Verify that installations with permitted Class II injection wells submit a quarterly report that summarizes the results of monitoring including:**
- monthly records of injected fluids
 - any major changes in characteristics or sources of injected fluid.
- Verify that the results of mechanical integrity tests conducted on Class II and III injection wells are reported to the Department.**

Verify that the results of mechanical integrity tests conducted on Class II and III injection wells are reported to the Department.

2-52. Installations with permitted injection wells that may have fluid migration into or between USDW must take specific actions (UICR, R61-87.13(EE)).

Determine if the installation has any of the following:

- any monitoring or other information that indicates that any contaminant may cause an endangerment to an USDW
- noncompliance or malfunction that may cause fluid migration into a USDW or between USDWs.

Verify that the installation has reported the occurrence to the Department orally within 8 h, followed by a written submission within 5 days of the discovery

Verify that the installation immediately stops injection upon the discovery that fluid may have migrated into or between underground sources of drinking water.

Verify that the injection system is not restarted until the installation has obtained written approval from the Department.

- Determine if the installation has any of the following:**
- any monitoring or other information that indicates that any contaminant may cause an endangerment to an USDW
 - noncompliance or malfunction that may cause fluid migration into a USDW or between USDWs.
- Verify that the installation has reported the occurrence to the Department orally within 8 h, followed by a written submission within 5 days of the discovery**
- Verify that the installation immediately stops injection upon the discovery that fluid may have migrated into or between underground sources of drinking water.**
- Verify that the injection system is not restarted until the installation has obtained written approval from the Department.**

Verify that the installation has reported the occurrence to the Department orally within 8 h, followed by a written submission within 5 days of the discovery

Verify that the installation immediately stops injection upon the discovery that fluid may have migrated into or between underground sources of drinking water.

Verify that the injection system is not restarted until the installation has obtained written approval from the Department.

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Verify that the injection system is not restarted until the installation has obtained written approval from the Department.

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2-53. Installations with injection wells must met plugging and abandonment standards (UICR, R61-87.15).

Verify that prior to the plugging or abandonment of any injection well, the installation does the following:

- notify the Department 180 days prior to the plugging or abandonment of an injection well
- submit a revised plugging and abandonment plan to the Department.

Verify that the well to be abandoned is in a state of static equilibrium with the mud weight equalized top to bottom by a method prescribed by the Department prior to the placement of the cement plug(s).

- Verify that prior to the plugging or abandonment of any injection well, the installation does the following:
- notify the Department 180 days prior to the plugging or abandonment of an injection well
 - submit a revised plugging and abandonment plan to the Department.
- Verify that the well to be abandoned is in a state of static equilibrium with the mud weight equalized top to bottom by a method prescribed by the Department prior to the placement of the cement plug(s).

Verify that the well to be abandoned is in a state of static equilibrium with the mud weight equalized top to bottom by a method prescribed by the Department prior to the placement of the cement plug(s).

Appendix 2 - 1

Classification of Injection Wells

(Source: UICR, R61-87)

The following are the classifications for injection wells protecting underground sources of drinking water from injection:

Class I (wells) applies to industrial, municipal and other injection wells for disposing of fluids into the subsurface or groundwater.

Class II applies to wells which inject fluids; this class includes wells which are brought to the surface in connection with conventional oil or natural gas production. No person shall use or operate a well of this class for injection except as authorized by a permit issued by the Department. (Please refer to accession number 7252 for additional requirements for Class II wells, including design criteria and operations and application for permits.)

Class III applies to special process wells which use injection for extraction of minerals. No person shall construct use or operate a well of this class for injection except as authorized by a permit issued by the Department. A mining permit may be necessary before mineral extraction is initiated.

Class IV applies to injection wells for disposing of hazardous or radioactive waste into the subsurface or groundwater. No person shall construct use or operate a well of this class for injection.

Class V.A. applies to all injection wells not included in Class I, II, III, IV and V.B., and also includes drainage wells and injection wells used in experimental technologies, injection wells associated with the recovery of geothermal energy. No person shall construct, use or operate a well of this class for injection except as authorized by a permit issued by the Department.

Class V.B. applies to all injection wells used to return to the supply aquifer the water which has passed through a noncontact system. This class does not require a permit. All Class V.B. well owners shall report details of the well to the Department not later than 1 yr after the effective date of these regulations for existing wells and no later than 30 days for new wells.

SECTION 3

SAFE DRINKING WATER ACT (SDWA)

South Carolina Supplement

SECTION 3

SAFE DRINKING WATER ACT (SDWA) South Carolina Supplement

Definitions

These definitions were taken from the South Carolina Department of Health and Environmental Control (DHEC) Primary Drinking Water Regulations.

- *Aggressive Index* - a measurement of the ability of water to deteriorate the exposed surface of asbestos pipes.
- *Backflow Prevention Device* - any device approved by the South Carolina DHEC for use in preventing backflow.
- *Best Available Technology or BAT* - the best technology, treatment techniques, or other means which the U.S. Environmental Protection Agency (USEPA) finds, after examination for efficiency under field conditions and not solely under laboratory conditions, are available.
- *CFR* - Code of Federal Regulations.
- *Coagulation* - a process using coagulant chemicals and mixing by which a colloid and suspended material are destabilized and agglomerated into a floc.
- *Coliform Bacteria Group* - a group of bacteria predominantly inhabiting man or animals. It includes all aerobic and facultative anaerobic gram negative, nonspore forming bacilli that ferment lactose with the production of gas. Also included are all bacteria that produce a dark, purplish-green colony with metallic sheen by membrane filter technique used for coliform detection purposes.
- *Coliform Positive* - the presence of coliform in a water sample.
- *Coliform Sample* - a sample of water collected from the distribution system at or after the first service connection and analyzed for the presence of coliform bacteria.
- *Commissioner* - the State Health Commissioner.
- *Community Water System* - a public water supply used by year around residents.
- *Confluent Growth* - means a continuous growth covering the entire filtration area of a membrane filter, or a portion thereof, in which bacterial colonies are not discrete.
- *Contaminant* - any physical, chemical, biological, or radiological substance or matter in water.
- *Conventional Filtration Treatment* - a series of processes including coagulation, flocculation, sedimentation, and filtration resulting in substantial particulate removal.
- *Corrosivity* - the tendency of water to form or dissolve calcium carbonate as a film or scale.

- **Cross Connection** - any link or channel between the piping which carries drinking water and the piping or fixtures which carry other water or other substances.
- **CT** - the product of the residual disinfectant concentration "C" (measured in milligrams per liter) and the disinfectant contact time, "T" (measured in minutes).
- **Department** - the South Carolina Department of Health and Environmental Control.
- **Diatomaceous Earth Filtration** - a process resulting in substantial particulate removal in which a precoat cake of diatomaceous earth filter media is deposited on a support membrane, and while the water is passing through the cake on the septum, additional filter media known as body feed is continuously added to the feed water to maintain the permeability of the filter cake.
- **Direct Filtration** - a series of processes, including coagulation and filtration but excluding sedimentation, resulting in substantial particulate removal.
- **Disinfectant** - any oxidant (including chlorine) that is added to water in any part of the treatment or distribution process for the purpose of killing or deactivating pathogenic organisms.
- **Disinfection** - a process that inactivates pathogenic organisms in water by chemical oxidants or other equivalent agents.
- **Disinfectant Contact Time** - the time in minutes that it takes for water to move from the point of disinfectant application or the previous point of disinfection residual measurement to a point before or at the point where residual disinfectant concentration is measured.
- **Domestic or Other Nondistribution System Plumbing Problem** - a coliform contamination problem in a public water system with more than one service connection, that is limited to the specific service connection from which the coliform-positive sample was taken.
- **Filtration** - a process for removing particulate matter from water through porous media.
- **Flocculation** - a process to enhance agglomeration or collection of smaller particles into larger, more easily settleable particles through gentle stirring by hydraulic or mechanical means.
- **Gross Alpha Particle Activity** - the total radioactivity due to alpha particle emission as inferred from measurement on a dry sample.
- **Gross Beta Particle Activity** - the total radioactivity due to a beta particle emission as inferred from measurement on a dry sample.
- **Groundwater Under the Direct Influence of Surface Water** - any water beneath the surface of the ground with:
 1. significant occurrences of insects or other macroorganisms, algae, or large-diameter pathogens such as *Giardia lamblia*
 2. significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH which closely correlates to surface water conditions.
- **Halogen** - one of the chemical elements chlorine, bromine, fluorine, astatine, or iodine.

- **HPC** - heterotrophic bacteria, measured as heterotrophic plate count.
- **Lead Free** - when used with respect to solders and flux, all solders and flux containing not more than 0.2 percent lead, and when used with respect to pipes and fittings containing not more than 8.0 percent lead.
- **Legionella** - a genus of bacteria, some species of which have caused a type of pneumonia called legionnaires disease.
- **Manmade Beta Particle and Photon Emitters** - all radionuclides emitting beta particles and/or photons listed on *Maximum Permissible Body Burdens and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure*, NBS Handbook 69, except the daughter products of thorium-232, uranium-235, and uranium-238.
- **Maximum Contamination Level (MCL)** - the maximum allowable level of a contaminant in a water delivered to users of a public water system, (except in the case of turbidity where the maximum allowable level is measured at the point of entry into a distribution system. Contaminants occurring in the water resulting from circumstances controlled by the water user, except those resulting from corrosion of piping and plumbing caused by water are excluded from this definition.)
- **Maximum Contamination Level Goal (MCLG)** - the maximum level of a contaminant in water that is delivered to the consumer service outlet of the ultimate user.
- **Maximum Total Trihalomethane Potential (MTP)** - the maximum trihalomethane (THM) concentration of total trihalomethanes (TTHM) produced in a given water containing excess free chlorine residuals after 7 days retention at a temperature of 25 °C (77 °F) or above.
- **Near the First Service Connection** - at one of the 20 percent of service connections in the entire system that are near the water supply treatment system, as measured by the water transport time within the distribution system.
- **NTU** - nephelometric turbidity unit.
- **Noncommunity Water System** - a public water supply that is not a community water system.
- **Nontransient Noncommunity Water System** - a public water supply that is not a community water system and that regularly serves at least 25 of the same persons over 6 mo of the year.
- **Operator** - a person certified by the South Carolina Board of Certification of Environmental Systems Operators as being qualified to conduct tests of the raw and treated water, adjust chemical feed rates, turn valves, and operate equipment so as to change the quality of surface water to meet established standards.
- **Pathogenic** - a specific agent (bacterium, virus, or parasite) causing or capable of causing disease.
- **PicoCurie (pCi)** - the quantity of radioactive material producing 2.22 nuclear transformations per minute.
- **Point of Disinfection Application** - the point at where the disinfectant is applied and water downstream of that point is not subject to recontamination by surface water runoff.

- ***Point of Entry Treatment Device (POE)*** - is the treatment device applied to the drinking water entering a house or building for the purpose of reducing contaminants in the drinking water distributed throughout the house or building.
- ***Point of Use Treatment Device (POU)*** - a treatment device applied to a single tap used for the purpose of reducing contaminants in drinking water at that one tap.
- ***Pollution*** - the presence of any foreign substance in the water that tends to degrade its quality so as to constitute an unnecessary risk or impair the usefulness of the water.
- ***Public Health Hazard*** - a condition, device, or practice that is conducive to the introduction of water-borne disease organisms or harmful chemical, physical, or radioactive substances into a public water system and that presents an unreasonable risk to health.
- ***Public Water Supply*** - any publicly or privately owned waterworks system which provides drinking water for human consumption, including the source of the supply.
- ***rem*** - the unit dose equivalent from ionizing radiation to the total body or any internal organ or organ system.
- ***Residual Disinfectant Concentration*** - the concentration of disinfectant measured in milligrams per liter in a representative sample of water.
- ***Sanitary Survey*** - an onsite review of the water source, watershed, facilities, equipment, operation, and maintenance of the water system to produce and distribute safe drinking water.
- ***Secondary Maximum Contaminant Level (SMCL)*** - the level of a secondary contaminant that when exceeded, may adversely effect the aesthetic quality of the drinking water and thereby may deter public acceptance of drinking water provided by public water systems or may interfere with water treatment methods.
- ***Sedimentation*** - a process for removal of solids before filtration by gravity or separation.
- ***Slow Sand Filtration*** - a treatment process involving passage of raw water through a bed of sand at low velocity (generally less than 235 gal/ft²/day) resulting in substantial particulate removal by physical and biological mechanisms.
- ***Surface Water*** - all water which is open to the atmosphere and subject to surface water runoff.
- ***Standard Sample*** - the aliquot of finished drinking water.
- ***Total Trihalomethanes (TTHM)*** - the arithmetic sum of the concentrations per liter of THM compounds (trichloromethane, dibromochloromethane, bromodichloromethane, and tribromomethane) rounded to two significant figures.
- ***Too Numerous To Count (TNTC)*** - that the total number of bacterial colonies exceeds 200 on a 47 mm diameter membrane filter used for coliform bacteria detection.

- *Trihalomethanes (THM)* - the family of organic halogen compounds resulting from the displacement of three of the four hydrogen atoms in methane with chlorine, bromide, or iodine atoms in the molecular structure.
- *Turbidity* - a measure of the cloudiness of water caused by suspended particles. These units of measure for turbidity are nephelometric turbidity units.
- *Virus* - a virus of fecal origin which is infectious to humans by waterborne transmission.
- *Waterborne Disease Outbreak* - the significant occurrence of acute infectious illness, epidemiologically associated with the ingestion of water from a public water system that is deficient in treatment, as determined by the Department.
- *Water System* - any public water supply or any part or parts of a public water system.



SAFE DRINKING WATER ACT (SDWA)
GUIDANCE FOR SOUTH CAROLINA CHECKLIST USERS

APPLICABILITY:	REFER TO CHECKLIST ITEMS:
Water Sources	3-1 and 3-2
Public Water Systems Without Filtration	3-3
Public Water Systems With Filtration	3-4 through 3-9
Inorganic Chemicals	3-10
Organic Chemicals	3-11 and 3-12
Turbidity	3-13
Microbiological Contamination	3-14 through 3-20
Radionuclides	3-21 and 3-22
Secondary Maximum Contaminants	3-23
Sodium	3-24
Corrosivity Characteristics	3-25
Lead	3-26
Trihalomethanes	3-27 and 3-28
Volatile Synthetic Chemicals	3-29
Reporting and Recordkeeping	3-30 and 3-31
Public Notice	3-32
Water Treatment Plants	3-33 through 3-37
Cross Connections	3-38
Construction Permits	3-39

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
WATER SOURCES 3-1. Installations with public water systems that use surface water or groundwater under the direct influence of surface water must meet specific requirements for source water quality (R. 61-58.10(C)(1)).	<p>Verify that public water systems using surface water or groundwater under the direct influence of surface water achieve the following disinfection standards:</p> <ul style="list-style-type: none"> - at least 99.9 percent (3-log) removal and/or inactivation of <i>Giardia lamblia</i> cysts between a point where the raw water is not subject to recontamination of surface water runoff and a point downstream before or at the first customer - at least 99.99 percent (4-log) removal and/or inactivation of viruses between a point where the raw water is not subject to recontamination by surface water. <p>(NOTE: A public water system using surface water or groundwater under the direct influence of surface water is in compliance if it meets the requirements for avoiding filtration and disinfection.)</p> <p>Verify that water systems using a surface water source meet the following requirements for source water quality:</p> <ul style="list-style-type: none"> - the fecal coliform concentration is equal to or less than 20/100 mL, or the total coliform concentration is equal to or less than 100/100 mL in representative samples of the source water immediately prior to the first or only point of disinfection in at least 90 percent of the measurements made for the 6 previous months that the system served water to the public on an ongoing basis - the turbidity level does exceed 5 NTU in representative samples of the source water immediately prior to the first or only point of disinfectant application. <p>(NOTE: The turbidity level may be waived if the Department determines the event was caused by unusual and unpredictable circumstances, and as a result there have not been more than two events in the past 12 mo or five events in the past 120 mo.)</p>
3-2. Public water systems supplied by surface water sources must maintain a watershed control program (R. 61-58.10(C)(2)).	<p>Verify that the water system maintains a watershed control program which minimizes the potential for contamination by <i>Giardia lamblia</i> cysts and viruses in the source water.</p> <p>(NOTE: The Department will determine whether the watershed control program is adequate.)</p> <p>Verify that at a minimum the watershed control program:</p> <ul style="list-style-type: none"> - characterizes the watershed hydrology and land ownership - identifies activities that may have an adverse effect on source water quality - monitors activities that may have an adverse effect on source water quality. <p>Verify that the water system can demonstrate through ownership or written agreement with landowners that it can control all human activities that may have an adverse impact on the microbiological quality of the source water.</p>

**COMPLIANCE CATEGORY:
SAFE DRINKING WATER ACT (SDWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>PUBLIC WATER SYSTEMS WITHOUT FILTRATION</p> <p>3-3. Installations with public water systems that provide disinfection and do not provide filtration must meet specific requirements (R. 61-58.10(D)(1)).</p>	<p>Verify that public water systems that do not provide filtration maintain the following disinfection standards:</p> <ul style="list-style-type: none"> - disinfection treatment sufficient to ensure at least 99.9 percent (3-log) inactivation of <i>Giardia lamblia</i> cysts every day the system serves water to the public, except for 1 day each month - disinfection treatment sufficient to ensure at least 99.99 percent (4-log) inactivation of viruses every day the system serves water to the public, except for 1 day each month. <p>Verify that the disinfection system has one of the following:</p> <ul style="list-style-type: none"> - redundant components, including an auxiliary power supply with automatic start-up and alarm - automatic shut-off of delivery of water to the distribution system whenever there is less than 0.2 mg/L of residual disinfectant concentration in the water. <p>Verify that the residual disinfection concentration in the water entering the distribution system is not less than 0.2 mg/L for more than 4 h.</p> <p>(NOTE: The residual disinfectant concentration is measured as total chlorine, combined chlorine, or chlorine dioxide. Water in the distribution system with a heterotrophic bacteria concentration less than or equal to 500/mL (measured as HPC) is deemed to have a detectable disinfectant residual.)</p> <p>Verify that the value V, as defined in Appendix 3-1, does not exceed 5 percent in 1 mo, for any 2 consecutive months.</p>

**COMPLIANCE CATEGORY:
SAFE DRINKING WATER ACT (SDWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>PUBLIC WATER SYSTEMS WITH FILTRATION</p> <p>3-4. Installations with public water systems that provide filtration and disinfection must meet specific requirements (R. 61-58.10(D)(2)).</p> <p>3-5. Installations with public water systems must meet specific requirements for filtration (R. 61-58.10(E)).</p>	<p>Verify that public water systems that provide filtration maintain the following disinfection standards:</p> <ul style="list-style-type: none"> - disinfection treatment sufficient to ensure at least 99.9 percent (3-log) inactivation of <i>Giardia lamblia</i> cysts every day the system serves water to the public, except 1 day each month - disinfection treatment sufficient to ensure at least 99.99 percent (4-log) inactivation of viruses every day the system serves water to the public, except 1 day each month - the residual disinfection concentration in the water entering the distribution system can not be less than 0.2 mg/L for more than 4 h. <p>Verify that the residual disinfectant concentration in the distribution system is not undetectable in more than 5 percent of the samples each month, for any 2 consecutive months that the water system serves water to the public.</p> <p>Verify that water systems using conventional or direct filtration maintain the following standards:</p> <ul style="list-style-type: none"> - turbidity level less than or equal to 0.5 NTU in at least 95 percent of the measurements taken each month - at no time may the turbidity level of the samples exceed 5 NTU. <p>(NOTE: If the Department determines that the system is capable of achieving at least 99.9 percent removal and/or inactivation of <i>Giardia lamblia</i> cysts at some turbidity level higher than 0.5 NTU in at least 95 percent of the measurements taken each month, the Department may substitute this higher turbidity limit for that system.)</p> <p>Verify that water systems using slow sand filtration maintain the following standards:</p> <ul style="list-style-type: none"> - turbidity level less than or equal to 1 NTU in at least 95 percent of the measurements taken each month - at no time may the turbidity level of the samples exceed 5 NTU. <p>Verify that water systems using diatomaceous earth filtration maintain the following standards:</p> <ul style="list-style-type: none"> - turbidity level of representative samples less than or equal to 1 NTU in at least 95 percent of the measurements taken each month - at no time may the turbidity level of the samples exceed 5 NTU.

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
3-5. (continued)	<p>(NOTE: A public water system may use a filtration technology not listed if it demonstrates that the combination of the alternative filtration and disinfection treatment meets the disinfection requirements and consistently achieves 99.9 percent removal and/or inactivation of <i>Giardia lamblia</i> cysts and 99.99 percent removal and/or inactivation of viruses.)</p>
3-6. Installations that do not provide filtration must meet specific monitoring requirements (R. 61-58.10(F)(2)).	<p>Verify that the water system samples for fecal or total coliform at the frequency listed in Appendix 3-2.</p> <p>Verify that fecal coliform or total coliform density measurements are performed on representative source water samples immediately prior to the first or only point of disinfectant application.</p> <p>Verify that one fecal or total coliform density measurement is made every day the water system serves water to the public and the turbidity of the source water exceeds 1 NTU.</p> <p>(NOTE: The Department may waive this standard or require more stringent monitoring.)</p> <p>Verify that turbidity measurements are performed on representative grab samples of source water immediately prior to the first or only point of disinfectant application every 4 h the water system serves water to the public.</p> <p>(NOTE: A public water system may substitute continuous turbidity monitoring for grab sample monitoring if approved by the Department.)</p> <p>Verify that the residual disinfectant concentration of the water entering the distribution system is monitored continuously and the lowest value is recorded each day.</p> <p>(NOTE: If there is a failure in the continuous monitoring equipment, grab sampling every 4 h may be substituted for no more than 5 working days following the failure.)</p> <p>Verify that the following parameters used in the CT calc determination are monitored as follows:</p> <ul style="list-style-type: none"> - the temperature of the disinfected water is measured at least once a day at each disinfectant concentration sampling point - if the system uses chlorine, the pH of the disinfected water is measured at least once a day at each residual disinfectant concentration sampling point - the disinfectant contact time is determined for each day during the peak flow - the residual disinfectant concentration of the water before or at the first customer is determined for each day during the peak flow. <p>Verify that water systems serving 3300 or fewer persons that do not conduct continuous monitoring of residual disinfectant concentration take grab samples at the frequencies listed in Appendix 3-3.</p>

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
3-6. (continued)	<p>Verify that, if at any time the residual disinfectant concentration falls below 0.2 mg/L in a system using grab sampling, the water system samples every 4 h until the residual concentration is equal to or greater than 0.2 mg/L.</p> <p>Verify that the residual disinfectant concentration is measured at least at the same points and same times as total coliforms are sampled, unless the Department determines otherwise.</p> <p>(NOTE: The HPC may be measured in lieu of residual disinfectant concentration.)</p>
3-7. Installations that provide filtration must meet specific monitoring requirements (R. 61-58.10(F)(3)).	<p>Verify that the turbidity measurements are performed on representative samples every 4 h the system serves water to the public.</p> <p>(NOTE: The Department may allow continuous monitoring or a reduced sampling frequency. If there is a failure in the continuous monitoring equipment, grab sampling every 4 h may be substituted for no more than 5 working days following the failure.)</p> <p>Verify that, if at any time the residual disinfectant concentration falls below 0.2 mg/L in a system using grab sampling, the water system samples every 4 h until the residual concentration is equal to or greater than 0.2 mg/L.</p> <p>Verify that water systems serving 3300 or fewer persons that do not conduct continuous monitoring of residual disinfectant concentration take grab samples at the frequencies listed in Appendix 3-3.</p> <p>Verify that the residual disinfectant concentration is measured at least at the same points and same times as total coliforms are sampled, unless the Department determines otherwise.</p> <p>(NOTE: A public water system that uses a surface water source or a groundwater source under the influence of surface water and provides filtration must monitor for microbiological contaminants beginning 29 June 1993 or when filtration is installed, whichever is later. HPC may be measured in lieu of residual disinfectant concentration.)</p>
3-8. Installations with public water systems that use surface water sources and do not provide filtration must meet specific reporting requirements (R. 61-58.10(G)(1)).	<p>Verify that the water system submit monthly reports regarding source water quality to the Department within 10 days after the end of each month the system serves water to the public.</p> <p>Verify that the water system submits monthly reports regarding disinfection to the Department within 10 days after the end of each month the system serves water to the public.</p>

**COMPLIANCE CATEGORY:
SAFE DRINKING WATER ACT (SDWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>3-8. (continued)</p>	<p>Verify that the monthly reports regarding source water quality includes the following information:</p> <ul style="list-style-type: none"> - the cumulative number of mo of reported results - the number of fecal and/or total coliform samples (if the system monitors for both, only fecal coliforms need be reported) analyzed during the month, dates of sample collection, and dates when the turbidity level exceeded 1 NTU - the number of samples during the month that had equal to or less than 20/100 mL fecal coliforms and/or equal to or less than 100/100 mL total coliforms, whichever are analyzed - the cumulative number of fecal or total coliform samples, whichever are analyzed, during the previous 6 mo the system served water to the public - the cumulative number of samples that had equal to or less than 20/100 mL fecal coliforms or equal to or less than 100/100 mL total coliforms, whichever are analyzed, during the previous 6 mo the system served water to the public - the percentage of samples that had equal to or less than 20/100 mL fecal coliforms or equal to or less than 100/100 mL total coliforms, whichever are analyzed, during the previous 6 mo the system served water to the public - the maximum turbidity level measured during the month, the date of occurrence for any measurements which exceeded 5 NTU, and the date the occurrence was reported to the Department - for the first 12 mo of recordkeeping, the dates and cumulative number of events during which the turbidity exceeded 5 NTU. <p>Verify that the monthly reports regarding disinfection includes the following information:</p> <ul style="list-style-type: none"> - or each day, the lowest measurement of residual disinfectant concentration in milligrams per liter in water entering the distribution system - the date and duration of each period when the residual disinfectant concentration in water entering the distribution system fell below 0.2 mg/L, and when the Department was notified - the daily residual disinfectant concentration (in milligrams per liter) and disinfectant contact times (in minutes) used for calculating the CT calc value - if chlorine is used, the daily measurement of pH of disinfected water following each point of chlorine disinfection - the daily measurements of water temperature in Centigrade following each point of disinfection - the daily CT calc and CT calc/CT 99.9 values for each disinfectant measurement or sequence and the sum of all CT calc/CT 99.9 values before or at the first customer - the daily determination of whether disinfection achieves adequate <i>Giardia lamblia</i> cyst and virus inactivation, i.e., whether (CT calc/CT 99.9) is at least 1.0 or, where disinfectants other than chlorine are used.

**COMPLIANCE CATEGORY:
SAFE DRINKING WATER ACT (SDWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
3-8. (continued)	<p>Verify that the water system submits monthly reports regarding total coliform monitoring to the Department within 10 days after the end of each month the system serves water to the public.</p> <p>Verify that the monthly reports regarding total coliform monitoring includes the following information:</p> <ul style="list-style-type: none"> - the number of instances in which the residual disinfectant concentration is measured - the number of instances in which the residual disinfectant concentration is not measured but the HPC is measured - the number of instances in which no residual disinfectant concentration is measured but not detected and no HPC is measured - the number of instances in which no residual disinfectant concentration is detected and the HPC is greater than 500/mL - the number of instances in which the residual disinfectant concentration is not measured and the HPC is greater than 500/mL - for the current and previous month the water system served water to the public, the value of V as defined by the formula listed in Appendix 3-1. <p>Verify that the water system submits to the Department a summary of its compliance with all watershed control program requirements, as well as a report of the onsite inspection, unless it was conducted by the Department, no later than 10 October of each year.</p> <p>Verify that the Department is notified as soon as possible, but no later than by the end of the next business day, if any of the following occur:</p> <ul style="list-style-type: none"> - a waterborne disease outbreak potentially attributable to the water system - turbidity exceeding 5 NTU - the residual disinfectant concentration falling below 0.2 mg/L in the water entering the distribution system. <p>(NOTE: The water system is required to notify the Department whether or not the residual was restored to at least 0.2 mg/L within 4 h.)</p> <p>Verify that public water systems using a surface water source or groundwater under the direct influence of surface water and do not provide filtration, submit monthly reports regarding turbidity and disinfection to the Department within 10 days after the end of each month the system serves water to the public.</p> <p>Verify that the monthly reports regarding turbidity and disinfection include the following information:</p> <ul style="list-style-type: none"> - the total number of filtered water turbidity measurements taken during the month that are less than or equal to the turbidity limits - the number and percentage of filtered water turbidity measurements taken during the month that are less than or equal to the turbidity limits

**COMPLIANCE CATEGORY:
SAFE DRINKING WATER ACT (SDWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>3-8. (continued)</p>	<ul style="list-style-type: none"> - the date and value of any turbidity measurements taken during the month that exceed 5 NTU - for each day, the lowest measurement of residual disinfectant concentration in milligrams per liter in water entering the distribution system - the date and duration of each period when the residual disinfectant concentration in water entering the distribution system fell below 0.2 mg/L, and when the Department was notified of the occurrence.
<p>3-9. Installations with community and noncommunity water systems must monitor for inorganic chemical contamination (R. 61-58.5(B)(1) through (B)(2) and R. 61-58.5(C)(1) through (C)(4)).</p> <p>INORGANIC CHEMICALS</p> <p>3-10. Installations with noncommunity water systems must meet standards for nitrate contamination (R. 61-58.5(B)(3) and R. 61-58.5(C)(5)).</p>	<p>Verify that the water system does not exceed the MCL for inorganic chemicals listed in Appendix 3-4.</p> <p>Verify that the following sampling frequencies for inorganic chemicals are met:</p> <ul style="list-style-type: none"> - community water systems using surface water, annually - community water systems using only groundwater, every 3 yr - noncommunity water systems, every 3 yr. <p>Verify that when an MCL for inorganic chemicals (see Appendix 3-4) is exceeded, the Department is notified within 7 days and three additional analyses at the same sampling points are initiated within 30 days.</p> <p>Verify that, when the average of four analysis rounded to four significant figures exceeds an MCL for organic chemicals, the water system notifies the Department and initiates public notification.</p> <p>Verify that the water system does not exceed the MCL of 10 mg/L for nitrate.</p> <p>Verify that the water system monitor each active source for nitrate levels at least once every 24 mo.</p> <p>Verify that, when the MCL for nitrate is exceeded, the water system conducts a second analysis within 24 h.</p> <p>Verify that the water system notifies the Department if the mean of the first and second analysis is greater than the MCL.</p> <p>(NOTE: Compliance for the MCL for nitrate is based on the mean of two consecutive analysis. If the mean of the two analysis is greater than the MCL, then the water system is in violation of the MCL for nitrate and must notify the Department.)</p>

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
ORGANIC CHEMICALS 3-11. Installations with community water systems must monitor for organic chemical contamination (R 61-58.5(D) and (E)).	<p>Verify that the water system does not exceed the MCLs for organic chemicals listed in Appendix 3-5.</p> <p>Verify that the water system monitors for inorganic chemical contamination at least every 36 mo, or at the interval specified by the Department.</p> <p>(NOTE: When the average of four analyses, rounded to four significant figures, exceeds an MCL for organic chemicals, the water system must notify the Department and initiate public notification. Monitoring after public notification is at a frequency designated by the Department and should continue until the MCL has not been exceeded in two successive samples, or until a monitoring schedule, variance, or exemption becomes effective. The Department may require additional analyses for any organic constituent that might exceed the MCL in any community water system.)</p> <p>(NOTE: Organic chemical sampling and analytical requirements apply only to community water systems that serve at least 15 service connections used by year around residents or regularly serve at least 25 yr-around residents).</p> <p>Verify that samples taken to monitor for organic chemical contamination are collected during the period of the year designated by the Department as the period when contamination by pesticides is most likely to occur.</p> <p>Verify that community water systems utilizing only groundwater sources conduct organic chemical analysis at a frequency determined by the Department.</p> <p>Verify that, if the result of an analysis for organic chemicals indicates the level of any contaminant exceeds a MCL, the water system reports to the Department within 7 days and initiate three additional analyses within 30 days.</p>
3-12. Installations with community and nontransient, noncommunity water systems must conduct special monitoring for organic chemicals (R 61-58.5(CC)).	<p>Verify that installations with community and nontransient, noncommunity water systems monitor for the organic chemicals listed in Appendix 3-6.</p> <p>Verify that surface water systems sample at points representative of each source or at the entry point to the distribution system.</p> <p>Verify that surface water systems sample at least once every quarter.</p> <p>Verify that groundwater systems sample at points of entry to the distribution system representative of each well after any application of treatment.</p> <p>(NOTE: Systems will monitor for ethylene dibromide (EDB) and 1,2-dibromo-3-chloropropane (DBCP) only if the Department determines they are vulnerable to contamination by either or both of these substances.</p>

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
3-12. (continued)	<p>Verify that the water system notifies the public in the first set of bills after receiving the results of the organic chemical testing.</p> <p>Verify that all community and nontransient, noncommunity water systems monitor for the organic chemicals listed in Appendix 3-6 at least once every 5 yr.</p>
TURBIDITY	
3-13. Installations with community and noncommunity water systems must monitor for turbidity (R 61-58.5(F) and (G)).	<p>Verify that community and noncommunity water systems using surface water sources, in whole or in part, do not exceed the following turbidity levels:</p> <ul style="list-style-type: none"> - 1 NTU, as determined by a monthly average, except that 5 NTU or fewer may be allowed if the installation of water can demonstrate that the higher turbidity does interfere with disinfection or microbiological contaminant determinations - 5 NTU, based on an average for 2 consecutive days. <p>(NOTE: Turbidity sampling and analytical requirements apply only to community and noncommunity water systems which serve at least 15 service connections or regularly serve an average of at least 25 individuals daily at least 60 days out of the year and which use water obtained in whole or in part from surface sources.)</p> <p>Verify that samples for turbidity analysis are taken at representative entry points to the water distribution system.</p> <p>Verify that samples for turbidity analysis are collected at least once a day.</p> <p>Verify that, when the result of a turbidity analysis indicates the maximum allowable limit for turbidity has been exceeded, the measurements are confirmed by resampling as soon as practicable, and preferably within 1 h.</p> <p>Verify that when a repeat sample confirms the maximum allowable limit for turbidity has been exceeded, the water system reports to the Department within 48 h.</p> <p>(NOTE: The repeat sample must be the sample used for the purpose of calculating the monthly average. If the monthly average of the daily samples exceeds the maximum allowable limit, or if the average of two samples taken on consecutive days exceeds 5 NTU, the supplier of water must report this to the Department and notify the public.)</p>

**COMPLIANCE CATEGORY:
SAFE DRINKING WATER ACT (SDWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>MICROBIOLOGICAL CONTAMINATION</p> <p>3-14. Installations with community and noncommunity water systems must meet specific standards for microbiological contamination (R 61-58.5(H)).</p> <p>3-15. Installations with community and noncommunity water systems must meet specific requirements for microbiological sampling (R 61-58.5(I)(1)).</p>	<p>Verify that the installation does not violate the following MCL for microbiological contamination:</p> <ul style="list-style-type: none"> - for a system that collects at least 40 samples per month, no more than 5.0 percent of the samples collected during a month are total coliform positive - for a system that collects fewer than 40 samples per month, no more than one sample collected during a month is total coliform positive. <p>(NOTE: Any fecal coliform-positive repeat sample or <i>Escherichia coli</i> positive repeat sample, or any total coliform-positive repeat samples following a fecal coliform positive or <i>E. coli</i> positive routine sample constitutes a violation of the MCL for total coliforms. The MCL is based on the presence or absence of total coliforms in a sample, rather than coliform density.)</p> <p>Verify that samples for total coliform contamination are collected according to a written sample siting plan that has been reviewed by the Department.</p> <p>Verify that community water systems meet the monitoring frequency for total coliforms contamination, based on the population served by the system (see Appendix 3-7).</p> <p>(NOTE: The Department may reduce the monitoring frequency for community water systems serving 25 to 1000 persons if certain conditions are met.)</p> <p>Verify that community water systems using surface water in whole or in part sample at a minimum rate of eight coliform samples per month.</p> <p>Verify that community water systems take a minimum of one fecal or total coliform density measurement each day from the raw water source, and one coliform density or presence/absence measurement from the finished water, if treating water.</p> <p>(NOTE: The Department may waive this requirement on a case-by-case basis.)</p> <p>Verify that noncommunity water systems monitor for total coliforms at the following frequency:</p> <ul style="list-style-type: none"> - a water system using only groundwater (except groundwater under the direct influence of surface water) and serving 1000 or less persons, each calendar quarter the system serves water to the public - a system using only groundwater (except groundwater under the direct influence of surface water) and serving more than 1000 persons during any month, at the same frequency as a like-sized community water system (see Appendix 3-7)

**COMPLIANCE CATEGORY:
SAFE DRINKING WATER ACT (SDWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
3-15. (continued)	<ul style="list-style-type: none"> - a system using surface water in whole or in part, at the same frequency as a like-sized community water system (see Appendix 3-7) - a system using groundwater under the direct influence of surface water, at the same frequency as a like-sized community water system. <p>(NOTE: The Department may reduce the sampling frequency.)</p> <p>Verify that community and noncommunity water systems collect samples for coliform contamination at regular intervals throughout the month.</p> <p>(NOTE: Except a system that uses groundwater not under the direct influence of surface water, which may collect all required samples on a single day if they are taken from different sites.)</p> <p>Verify that community and noncommunity water systems using surface water or groundwater under the direct influence of surface water, that do not practice filtration, collect at least one sample to be analyzed for the presence of total coliforms near the first service connection each day the turbidity level exceeds 1 NTU.</p> <p>(NOTE: The water system must collect this coliform sample within 24 h of the first exceedence when one or more turbidity measurements in any day exceed 1 NTU. These sampling results must be used to determine compliance.)</p>
<p>3-16. Installations with community and noncommunity water systems must meet specific requirements for microbiological repeat sampling (R 61-58.5(1)(2)).</p>	<p>Verify that when a routine sample is total coliform positive, the water system collects a set of repeat samples within 24 h of being notified of the positive result.</p> <p>(NOTE: The Department may extend the 24-h limit on a case-by-case basis.)</p> <p>Verify that water systems collecting more than one routine sample per month collect no fewer than three repeat samples for each total coliform positive sample found. .</p> <p>Verify that water systems collecting one or fewer routine sample per month collect no fewer than four repeat samples for each total coliform positive sample found.</p> <p>Verify that at least one repeat sample is taken from the sampling tap where the original total coliform-positive sample was taken, and at least one repeat sample is taken at a tap within five service connections downstream and within five service connections upstream of the original sampling site.</p> <p>Verify that all repeat samples for microbiological contamination are collected on the same day.</p> <p>Verify that, when one or more repeat samples in the set is total coliform positive, the water system collects an additional set of repeat samples within 24 h of being notified of the positive result.</p>

**COMPLIANCE CATEGORY:
SAFE DRINKING WATER ACT (SDWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
3-16. (continued)	<p>Verify that this process is repeated until either total coliforms are not detected in one complete set of repeat samples or the water system determines that the MCL for total coliforms has been met.</p> <p>(NOTE: The Department may waive this requirement if certain conditions are met.)</p>
<p>3-17. Installations with community and noncommunity water systems must meet specific requirements for sanitary surveys (R 61-58.5(I)(4)).</p>	<p>Verify that public water systems which do not collect five or more routine samples per month undergo an initial sanitary survey by 29 June 1994 for community water systems and 29 June 1999 for noncommunity water systems.</p> <p>Verify that public water systems undergo a sanitary survey every 5 yr thereafter.</p> <p>(NOTE: Noncommunity water systems using only protected and disinfected water must undergo subsequent surveys every 10 yr.)</p> <p>Verify that the sanitary surveys are conducted by the Department or an approved agent.</p>
<p>3-18. Installations must meet specific requirements for coliform sampling (R 61-58.5(I)(5)).</p>	<p>Verify that, when the water system has a routine or repeat sample that is total coliform positive, that total coliform positive medium is analyzed to determine if fecal coliform are present.</p>
<p>3-19. Installations must meet specific requirements for coliform analysis techniques (R 61-58.5(I)(6)).</p>	<p>Verify that the standard sample volume required for total coliform analysis regardless of the analytical method used is 100 mL.</p> <p>Verify that the water system conducts total coliform analysis in using one of the following methods:</p> <ul style="list-style-type: none"> - multiple tube fermentation (MTF) technique - membrane filter (MF) technique - presence-absence (P-A) coliform test - minimum medium ONPG-MUG (MMO-MUG) test.
<p>3-20. Installations with community and noncommunity water systems must meet specific requirements for public notice for microbiological contamination violations (R 61-58.5(I)(7)).</p>	<p>Verify that water systems which have exceeded the MCL for total coliforms report the violation to the Department no later than the end of the next business day after learning of the violation.</p> <p>Verify that water systems which have exceeded the MCL for total coliforms notify the public.</p> <p>Verify that water systems that fail to comply with a coliform monitoring or sanitary survey requirement report the violation to the Department within 10 days after discovery.</p>

**COMPLIANCE CATEGORY:
SAFE DRINKING WATER ACT (SDWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>RADIONUCLIDES</p> <p>3-21. Installations with community water systems must meet specific requirements for naturally occurring radionuclides (R 61-58.5(J) and (K)).</p>	<p>Verify that the following MCLs for naturally occurring radionuclides are not exceeded:</p> <ul style="list-style-type: none"> - a combined radium-226 and radium-228 MCL of 5 pCi/L - a gross alpha particle activity (including radium-226 but excluding radon and uranium) MCL of 15 pCi/L. <p>(NOTE: Monitoring requirements for naturally occurring radionuclides apply only to community water systems which serve at least 15 service connections used by year around residents or systems which regularly serve at least 25 year-around residents.)</p> <p>Verify that compliance with the MCL is based on the analysis of an annual composite for four consecutive quarterly samples or the average of the analyses of four samples obtained at quarterly intervals.</p> <p>(NOTE: A single yearly sample may be substituted for the quarterly sampling procedure at the discretion of the Department. The Department may require more frequent monitoring if the source of drinking water is in the vicinity of mining or other operations that may contribute to alpha particle activity.)</p> <p>(NOTE: The gross alpha particle activity measurement may be substituted for the required radium-226 and radium-228 analysis at the discretion of the Department.)</p> <p>Verify that when the gross alpha particle exceeds 5 pCi/L, the same or equivalent sample is analyzed for radium-226.</p> <p>Verify that, when the concentration of radium-226 exceeds 3 pCi/L, the same or an equivalent sample is analyzed for radium-228.</p> <p>Verify that, the water system monitors a new water source after introduction.</p> <p>(NOTE: Monitoring after the initial sample period need not include radium-228, except as required by the Department.)</p> <p>Verify that the installation conducts annual monitoring of any public water supply in which the radium-226 concentration exceeds 3 pCi/L.</p> <p>Verify that, if the average annual MCL for gross alpha particle activity or total radium is exceeded, the installation notifies the Department and the public.</p> <p>Verify that when the average annual MCL for gross alpha particle activity or total radium is exceeded, monitoring continues at quarterly intervals until the annual average concentration no longer exceeds the MCL, or until a another monitoring schedule is established.</p>

**COMPLIANCE CATEGORY:
SAFE DRINKING WATER ACT (SDWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>3-22. Installations with community water systems must meet specific requirements for man-made radionuclides contamination (R 61-58.5(L) and (M)).</p>	<p>Verify that the following MCLs for manmade radionuclides are not exceeded:</p> <ul style="list-style-type: none"> - an average annual concentration of beta particle and photon radioactivity from manmade radionuclides in drinking water that produces an annual dose equivalent to the total body or any internal organ greater than 4 mrem/yr - when two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ less than 4 mrem/yr. <p>(NOTE: The average annual concentration assumed to produce a total body organ dose of 4 mrem/yr for tritium is 20,000 pCi/L and for strontium-90 is 8 pCi/L.)</p> <p>Verify that public water systems using surface water sources and serving more than 100,000 persons, and other designated public water supplies, monitor for manmade radionuclides contamination by analysis of a composite of four consecutive quarterly samples or analysis of four quarterly samples.</p> <p>Verify that, if the gross beta particle activity exceeds 50 pCi/L, an analysis of the sample is performed to identify the major radioactive constituents present.</p> <p>Verify that the installation monitors for manmade radionuclides at least every 4 yr after the initial analysis.</p> <p>Verify that the quarterly analysis for gross beta particle activity is based on the analysis of monthly samples or a composite of three monthly samples.</p> <p>Verify that, if the gross beta particle activity in a sample exceeds 15 pCi/L, the same or equivalent sample is analyzed for strontium-89 and cesium-134.</p> <p>Verify that, if the gross beta particle activity exceeds 50 pCi/L, an analysis of the sample is performed to identify the major radioactive constituents present and the appropriate organ and total body doses must be calculated to determine compliance.</p> <p>Verify that for iodine-131 a composite of five consecutive daily samples is analyzed once each quarter.</p> <p>Verify that annual monitoring for strontium-90 and tritium is conducted by means of an analysis of a composite of four consecutive quarterly samples or analysis of four quarterly samples.</p> <p>Verify that, if the annual MCL for manmade radioactivity is exceeded, the installation notifies the Department and the public.</p> <p>Verify that, if the annual MCL for manmade radioactivity is exceeded, monitoring at monthly intervals is continued until the concentration no longer exceeds the MCL, or until a new monitoring schedule becomes effective.</p>

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
SECONDARY MAXIMUM CONTAMINANTS 3-23. Installations must attempt to meet secondary MCLs (R 61-58.5(O) and (P)).	Verify that installations with community and noncommunity water systems which serve 15 or more service connections or regularly serve an average of at least at least 25 individuals daily at least 6 days a year monitor for and attempt to meet the secondary MCLs listed in Appendix 3-8.
SODIUM 3-24. Installations with community water systems must monitor for sodium (R 61-58.5(Q)).	Verify that water systems using surface water sources collect and analyze one sample per year at the entry point of the distribution system. (NOTE: Community public water systems that serves at least 15 service connections used by year-around residents or serves at least 25 yr-round residents must monitor and report sodium levels in the finished drinking water.) Verify that water systems using groundwater sources collect and analyze one sample from each well every 3 yr. (NOTE: The number of samples collected may be reduced if the installation can demonstrate to the satisfaction of the Department that one or more of the wells to be monitored draw water from a single aquifer.) Verify that the installation notify the local public health officials of the sodium levels by direct mail within 3 mo after receiving the analyses. Verify that the written notice is forwarded to the Department within 10 days after notifying the local officials.
CORROSIVITY CHARACTERISTS 3-25. Installations with community water systems must meet specific requirements for corrosivity (R 61-58.5(R)).	Verify that community public water systems which serve at least 15 service connections or 25 yr-around residents monitor for corrosivity characteristics of the water from a representative entry point to the drinking water distribution system. Verify that at least two samples are collected for analyses per treatment plant using any surface water sources, one during mid-winter and one during mid summer. Verify that one sample per well is be collected for treatment plants using groundwater sources.

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
3-25. (continued)	<p>(NOTE: The number of samples required may be reduced for multiple wells drawing raw water from a single aquifer.)</p> <p>Verify that measurements for corrosivity characteristics include measurement of:</p> <ul style="list-style-type: none"> - pH - calcium hardness - alkalinity - temperature - total dissolved solids (total filterable residue) - calculations of the Langelier index or the aggressive index, if approved. <p>Verify that community water systems report to the state if any of the following construction materials are present in the distribution system:</p> <ul style="list-style-type: none"> - lead from piping, solder, caulking, interior lining of distribution mains, alloys, and home plumbing - copper from piping and alloys, service lines, and home plumbing - galvanized piping, service lines, and home plumbing - ferrous piping materials such as cast iron and steel - vinyl-lined asbestos cement - coal tar lined pipes and tanks - asbestos cement pipe.
LEAD	
3-26. Installations must meet specific standards for lead in public water supplies (61-58.4(F)).	<p>Verify that any pipe, solder, or flux used in the installation or repair of the public water system is lead free.</p> <p>Verify that any pipe, solder, or flux used in any plumbing in a residential or nonresidential facility, which provides water for human consumption through a connection with a public water system, is lead free.</p>
TRICHALOMETHANES	
3-27. Installations must meet specific standards for TTHM concentration ((R 61-58.5(S)).	<p>Verify that community water systems serving 10,000 individuals or more that add a disinfectant to the water do not exceed the MCL of 0.10 mg/L for TTHMs.</p> <p>(NOTE: TTHM is a combination of bromodichloromethane, dibromochloromethane, tribromomethane (bromoform) and trichloromethane (chloroform).)</p>

**COMPLIANCE CATEGORY:
SAFE DRINKING WATER ACT (SDWA)
South Carolina Supplement**

**REGULATORY
REQUIREMENTS:**

REVIEWER CHECKS:

3-28. Installations must meet specific standards for TTHM monitoring and sampling (R 61-58.5(T)).

(NOTE: These requirements apply to community water systems serving 10,000 individuals or more which add a disinfectant to the water, and community water systems serving 75,000 or more persons.)

Verify that the minimum number of samples for TTHMs is based on the number of treatment plants.

(NOTE: Multiple wells drawing raw water from one aquifer may be approved as one treatment plant.)

Verify that community water systems using surface water sources or groundwater sources not otherwise approved for reduction of monitoring frequency, analyze for TTHMs at quarterly intervals with at least four samples for each treatment plant.

Verify that at least 25 percent of the samples are taken from locations reflecting the maximum residence time of the water in the system, and 75 percent are taken at representative locations.

Verify that quarterly results are averaged and reported to the Department within 10 days of receipt.

(NOTE: Compliance is determined based on a running average of quarterly samples collected.)

Verify that if the average of samples covering any 12-mo period exceeds the MCL, the installation reports to the Department and gives public notice.

Verify that water systems that violate the MCL for TTHMs monitor at a frequency designated by the Department and continue until a monitoring schedule has been established.

(NOTE: Monitoring frequency may be reduced upon written request. For community water systems utilizing only groundwater sources, analyses may be reduced, by the Department, to a minimum of one sample per year.)

Verify that, if at any time during the reduced monitoring frequency, the MCL is exceeded, the confirmed results are sent to the Department within 7 days and the regular monitoring frequency is resumed.

Verify that, before a community water system makes any changes which would affect its disinfection system, a plan is approved by the Department.

**COMPLIANCE CATEGORY:
SAFE DRINKING WATER ACT (SDWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>VOLATILE SYNTHETIC CHEMICALS</p> <p>3-29. Installations with community and nontransient noncommunity water systems must meet specific standards for volatile synthetic organic chemicals (R 61-58.5 (AA)).</p>	<p>Verify that the water system monitors for the volatile synthetic organic chemicals listed in Appendix 3-9.</p> <p>Verify that groundwater systems sample at points of entry to the distribution system representative of each well after any application of treatment.</p> <p>Verify that groundwater systems sample at the same or more representative locations every 3 mo, unless a reduced monitoring frequency has been established by the Department.</p> <p>Verify that surface water systems sample at points in the distribution system representative of each source, or at entry points to the distribution system after any application of treatment.</p> <p>Verify that samples for surface water systems are taken from each source every 3 mo, unless a reduced monitoring frequency has been established by the Department.</p> <p>Verify that, if a public water system draws water from more than one source and the sources are combined prior to distribution, the water system samples at an entry point to the distribution system during periods of normal operating conditions.</p> <p>(NOTE: Analysis for vinyl chloride is required only for groundwater systems that have detected one or more of the following two-carbon compounds: trichloroethylene, tetrachloroethylene, 1,2-dichloroethane, 1,1,1-trichloroethane, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, and 1,1-dichloroethylene. If the initial analysis does not detect vinyl chloride, the Department may reduce the monitoring frequency. Surface water systems may be required to monitor for vinyl chloride at the discretion of the Department.)</p> <p>Verify that water systems which do not detect any VOCs in the first year of quarterly sampling or subsequent samples and are considered vulnerable to VOC contamination by the Department, sample once every 3 yr for systems serving more than 500 connections and once every 5 yr for systems serving 500 or less connections.</p> <p>Verify that if any VOCs are detected in the first or subsequent samples, regardless of vulnerability, monitoring is repeated every 3 mo.</p>

**COMPLIANCE CATEGORY:
SAFE DRINKING WATER ACT (SDWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>REPORTING AND RECORDKEEPING</p> <p>3-30. Installations must meet specific recordkeeping requirements (R 61-58.5(B) and (D)).</p>	<p>Verify that measurements, or analyses required to be made on drinking water are reported to the Department within 10 days following the end of the monitoring period.</p> <p>(NOTE: A shorter time frame may be established by the Department.)</p> <p>Verify that, when the MCL are exceeded the Department is notified within 7 days.</p> <p>Verify that, when any primary drinking water regulation is violated, the Department is notified within 48 h.</p> <p>(NOTE: The installation is not required to report the analytical results to the Department when the state laboratory performs the analysis and reports to the Department.)</p> <p>Verify that the water system retains on its premises, or at a convenient location near its premises, all appropriate records and makes them available for inspection by the Department and the public upon request.</p> <p>Verify that these records are kept for the appropriate time period and include the following:</p> <ul style="list-style-type: none"> - records of turbidity, 1 yr - records of bacteriological, 5 yr - records of chemical analyses, 10 yr - records of action taken by the system to correct violations, 3 yr after the last action taken with respect to the particular violation involved - copies of any written reports, summaries, or communications relating to sanitary surveys of the system conducted by the system itself, by a private consultant, or by any local, state, or Federal agency, 10 yr after completion of the sanitary survey involved - records concerning a variance or exemption granted to the system, 5 yr following the expiration of the variance or exemption. <p>Verify that, if the information from laboratory reports is kept in tabular summaries, the following information is included:</p> <ul style="list-style-type: none"> - the date, place, and time of sampling and the name of the person who collected the sample - identification of the sample as to whether it was a routine distribution system sample, check sample, raw or process water sample, or other special purpose sample - date of analysis - laboratory and person responsible for performing analysis - the analytical technique or method used - the results of the analysis.

**COMPLIANCE CATEGORY:
SAFE DRINKING WATER ACT (SDWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>3-31. Installations must meet specific reporting requirements (R 61-58.5 (C)).</p>	<p>Verify that installations with surface water treatment plants submit the following reports on an approved form to the Department by the 10th day of each month:</p> <ul style="list-style-type: none"> - Surface Water Supply Monthly Operation Report - Bacteriological Summary Analysis Report - Turbidity Summary Analysis Input Report. <p>Verify that installations with groundwater treatment plants that provide water to a community water system serving at least 15 service connections or more than 25 persons submit the following reports on an approved form to the Department by the tenth day of each month:</p> <ul style="list-style-type: none"> - Groundwater Supply Monthly Operation Report - Bacteriological Summary Analysis Input Form. <p>Verify that installations with treatment plants using wells as a sole source submit the following reports on an approved form to the Department by the tenth day of each month:</p> <ul style="list-style-type: none"> - Bacteriological Summary Analysis Input Form (if eight or more bacteriological samples are taken each month) - Bacteriological Analysis Input Form (if seven or less bacteriological samples are taken each month) - the total amount of water pumped from each well and the total volume delivered to the customers each month, if the information is available. <p>Verify that installations with treatment plants that obtain water from another public water system submit the following reports on an approved form to the Department by the tenth day of each month:</p> <ul style="list-style-type: none"> - Bacteriological Summary Analysis Report - Bacteriological Analysis Input Form (if seven or less bacteriological samples are taken each month) - the total amount of water pumped from each well and the total volume delivered to the customers each month, if the information is available. <p>Verify that installations with groundwater treatment plants that use treatment processes other than the addition of chlorine or corrosion inhibitor or the adjustment of pH, and providing water to a noncommunity water system serving at least 15 service connections or more than 25 persons at least 60 days out of the year, submit the following reports on an approved form to the Department by the tenth day of each month:</p> <ul style="list-style-type: none"> - groundwater Supply Monthly Operation Report - Bacteriological Summary Analysis Input Form (if eight or more bacteriological samples are taken each month) - Bacteriological Analysis Input Form (if seven or less bacteriological samples are taken each month).

**COMPLIANCE CATEGORY:
SAFE DRINKING WATER ACT (SDWA)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>3-31. (continued)</p> <p>PUBLIC NOTICE</p> <p>3-32. Installations with public water systems must meet specific requirements for notifying the public (R 61-58.6(E)).</p>	<p>Verify that community water systems serving more than 100 service connections monitor the operating pressure in the distribution system at least once a year.</p> <p>Verify that, when the water system fails to comply with a MCL or treatment techniques, or fails to comply with the requirements of any schedule prescribed by the Department, or fails to perform required monitoring or testing procedures, persons served by the water system are notified.</p> <p>Verify that the water system gives public notice to any new billing units.</p> <p>Verify that the water system gives the public notice in the following way:</p> <ul style="list-style-type: none"> - by publication in a newspaper of daily circulation in the area served by the water system no later than 14 days after the failure or violation - by mail or hand delivery no later than 45 days after the violation - for violations of MCLs of contaminants that may pose an acute health risk, by furnishing a copy of the notice to local radio and television stations serving the area served by the water system no later than 72 h after the violation. <p>(NOTE: The Department may waive the 45-day time period.)</p> <p>Verify that the water system continues to give notice once every 3 mo by mail or hand delivery for as long as the violation occurs.</p> <p>Verify that the water system gives public for other violations, variances, and exceptions within 3 mo of the violation or granting of the exemption by publication in a daily newspaper of daily circulation in the area served by the water system.</p> <p>(NOTE: The Department may allow alternate forms of public notice if the water system is not served by a newspaper. Noncommunity water systems may give notice by hand delivery or continuous posting in conspicuous areas served by the system.)</p> <p>Verify that community and noncommunity water systems give a copy of the most recent public notice for any outstanding violation of any MCL to any new billing units.</p> <p>Verify that, when providing the information on potential adverse health effects, the water system includes specified language for the contaminants listed in Appendix 3-10.</p>

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
WATER TREATMENT PLANTS 3-33. Installations must meet specific standards for the operation and maintenance of water treatment plants (R 61-58.7(B)(1) through (B)(9)).	<p>Verify that the treatment plant has an operator on duty when the plant is in operation.</p> <p>Verify that the following areas are inspected at the designated time:</p> <ul style="list-style-type: none"> - the treatment plant itself, each shift - intake structures, once a day - wells and pneumatic tanks, once a week - pressure filters and enclosed aeration devices, once a year. <p>Verify that each operator has a written manual of Standard Operating Procedures for the treatment plant the operator is responsible for.</p> <p>Verify that the following are done on a daily basis:</p> <ul style="list-style-type: none"> - inspect the chemical feed equipment to ensure an adequate supply of chemicals for the day's operation - sample and analyze the finished water from the treatment plant to ensure the plant is operating properly. <p>Verify that chemical feed equipment is kept clean and chemical spills are cleaned up promptly.</p> <p>Verify that leaks in valves, pipes, pumps, and other equipment are repaired as soon as possible.</p>
3-34. Installations that use chlorine to disinfect the water must meet specific requirements (R 61-58.7(B)(10) through (B)(16)).	<p>Verify that the following conditions are met at treatment plants that use gas chlorinators:</p> <ul style="list-style-type: none"> - the door of the chlorination room is kept closed except for the entry and exit of personnel - all gas cylinders are secured to the wall or post by a chain, straps, or other proper restraint - electrical switches for the control of artificial lighting and ventilation are on the outside of the enclosure adjacent to the door - a gas mask approved by the Bureau of Mines of OSHA for protection against chlorine is provided - the chlorine mask is free from cracks in the rubber, the face plates clear, and the canisters replaced before the expiration date - there is no equipment in the chlorination room except the chlorinator and the chlorine cylinder. <p>Verify that, if chlorine is added, a trace residual of the chlorine is found throughout the distribution system.</p>

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
3-34. (continued)	<p>Verify that, if ammonia and chlorine are added as the disinfectant, a free chlorine residual of 2 mg/L is carried in water through the treatment plant and a combined chlorine residual of 2 mg/L is carried in the water leaving the plant.</p> <p>Verify that, if sodium fluoride, sodium silico-fluoride, or fluoride are added in any form to a public water supply, Department approval has been obtained.</p> <p>Verify that, if fluoride is added to the water, the following conditions are met:</p> <ul style="list-style-type: none"> - fluoride content is maintained at between 0.7 mg/L and 1.0 mg/L - tests to determine the fluoride concentration are made daily. <p>Verify that, if phosphate is added to the water that a maximum concentration of 5 mg/L is not exceeded.</p> <p>Verify that color coding of all pipes is accomplished by 31 December 1995.</p> <p>Verify that the treatment plant is not operated at a flow that causes the filtration rate of the filters to be exceeded or the sedimentation basin retention time to be reduced beyond its capacity.</p> <p>Verify that algae growth is kept to a minimum and all chemicals used for its control are approved by the Department.</p>
3-35. Installations must meet specific standards for the operation and maintenance of surface water treatment plants (R 61-58.7(C)).	<p>Verify that organic based herbicides are not used on the banks of the water supply reservoirs.</p> <p>Verify that herbicides and equipment are not stored in or near the intake structures, wet well pumping stations, or finished water storage facilities.</p> <p>Verify that all screens are cleaned as often as necessary to maintain proper functioning of the pump station.</p> <p>Verify that all intake structures are protected against unauthorized entry.</p>
3-36. Installations must meet specific for the operation and maintenance of groundwater treatment plants (R 61-58.7(D)).	<p>Verify that all lots containing wells are fenced or well enclosed in a structure to prevent the entrance of unauthorized persons.</p> <p>Verify that all drainage ditches within well lots are maintained so water flows freely away from the well.</p> <p>Verify that all wells are maintained so that the sanitary seal, the casing, the screened vent, and the concrete are in good repair.</p> <p>Verify that all exposed wiring is enclosed in rigid or flexible electrical conduits.</p>

COMPLIANCE CATEGORY: SAFE DRINKING WATER ACT (SDWA) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
3-37. Installations must meet specific requirements for distribution systems and storage tanks (R 61-58.7(E)).	<p>Verify that the drainage system on any storage tank lot is maintained to direct water away from the storage tanks.</p> <p>Verify that all elevated storage tanks and ground storage tanks are secured to prevent the entrance of unauthorized persons.</p> <p>Verify that the minimum pressure in a public water distribution system under normal conditions of use of water is 25 psi, at a customer's service connection.</p> <p>(NOTE: Twenty pounds per square inch will be accepted for a dead-end connection or at any service during unusually heavy flows, such as fire or flushing use. Normal working pressure should be about 50 psi and not less than 35 psi.)</p> <p>Verify that each public water system maintains a map of the distribution system showing water lines, and location of valves and how to operate each one.</p> <p>Verify that each valve and fire hydrant are inspected at least once a year.</p> <p>Verify that the water system initiates a leak detection and repair program.</p> <p>Verify that when a leak is repaired, the area affected is filled with water containing chlorine residual of 200 mg/L before being flushed and placed back in operation.</p>
CROSS CONNECTIONS	
3-38. Installations must meet certain requirements for cross connection control (R 61.58.6 (F)).	<p>Verify that the installation does not install, permit to be installed or maintain any cross connection between a public water supply and any other water supply, sewer or waste line or any containers of liquids.</p> <p>Verify that, if the connection is between two approved public water suppliers, common gate or check valves must be approved by both water suppliers and the Department.</p> <p>Verify that a check valve is used if the connection is between an approved public water supply and a service or other water supply not hazardous to health but not meeting the standards of the proved public water supply and not cross connected within its system with a potentially dangerous waste or liquid.</p> <p>Verify that if the connection is between an approved public water supply and a service or other water supply which has or may have any material in the water dangerous to health or be connected to any method dangerous to health that is or may be handled under pressure or subject to negative pressure, protection must be provided by an air gap separator.</p> <p>Verify that the check valves and cross connection control devices are checked annually by a certified tester, and a report is filed with the supplier of water.</p>

COMPLIANCE CATEGORY:
SAFE DRINKING WATER ACT (SDWA)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>CONSTRUCTION PERMITS</p> <p>3-39. Installations must have a permit for construction at water treatment plants (R 61-58.1).</p>	<p>Verify that the installation has a permit before the construction, expansion, or modification of any public water supply.</p>

Appendix 3 - 1

The Value "V"

(Source: R. 61-58.10(D))

$$(V) = \frac{c + d + e}{a + b} \times 100$$

where:

a = number of instances in which the residual disinfectant concentration is measured

b = number of instances in which the residual disinfectant concentration is not measured but the HPC is measured

c = number of instances in which the residual disinfectant concentration is measured but not detected and no HPC is measured

d = number of instances in which no residual disinfectant concentration is detected and where HPC is > 500/mL

e = number of instances in which the residual disinfectant concentration is not measured and HPC is > 500/mL.

Appendix 3 - 2

Minimum Monitoring Frequency for Coliforms

(Source: R. 61-58.10(F)(2))

Persons served	Samples/week*
< 500	1
501 to 3300	2
3301 to 10,000	3
10,001 to 25,000	4
> 25,000	5

* Samples must be taken on separate days

Appendix 3 - 3

Residual Sampling Frequency for Water Systems Serving Fewer than 3300 Persons

(Source: R. 61-58.10(F)(3))

Persons served	Samples/day*
< 500	1
501 to 1000	2
1001 to 2500	3
2501 to 3300	4

*The day's samples cannot be taken at the same time. The sampling intervals are subject to Department review and approval.

Appendix 3 - 4

Maximum Contaminant Levels (MCLs) for Inorganic Chemical

(Source: R. 61-58.5(B))

Contaminant	MCL (mg/L)
Arsenic (as As)	0.05
Barium (as Ba)	1.0
Cadmium (as Ca)	0.010
Chromium (as Cr)	0.05
Fluoride (as F)	4.0
Lead (as Pb)	0.05
Mercury (as Hg)	0.002
Nitrate (as N)	10.0
Selenium (as Se)	0.01
Silver (Ag)	0.05

Appendix 3 - 5

Maximum Allowable Levels for Organic Chemicals

(Source: R. 61-58.5(D) and (E))

Constituent	Level (mg/L)
Chlorinated hydrocarbons: Endrin (1,2,3,4,10, 10-hexa-chloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4-endo-5,8-dimethano naphthalene).	0.0002
Lindane (1,2,3,4,5,6-hexachloro-cyclohexane, gamma isomer).	0.004
Methoxychlor (1,1,1-Trichloro-2,2-bis (p-methoxyphenyl) ethane).	0.1
Toxaphene, technical chlorinated camphene, (67-69 percent chlorine).	0.005
Chlorophenoxy: 2,4-D (2,4-Dichlorophenoxy acetic acid)	0.1
2,4,5-TP Silver (2,4,5-Tri-chloro-phenoxypropionic acid	0.01

Appendix 3 - 6

Special Monitoring for Organic Chemicals

(Source: R 61-58.5(CC))

Chloroform
Bromodichloromethane
Chlorodibromomethane
Bromoform
trans-1,2-Dichloroethylene
Chlorobenzene
m-Dichlorobenzene
Dichloromethane
cis-1,2-Dichloroethylene
o-Dichlorobenzene
Dibromomethane
1,1-Dichloropropene
Tetrachloroethylene
Toluene
p-Xylene
o-Xylene
m-Xylene
1,1-Dichloroethane
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dichloropropane
1,1,2,2-Tetrachloroethane
Ethylbenzene
1,3-Dichloropropane
Styrene
Chloromethane
Bromomethane
1,2,3-Trichloropropane
1,1,1,2-Tetrachloroethane
Chloroethane
1,1,2-Trichloroethane
2,2-Dichloropropane
o-Chlorotoluene
p-Chlorotoluene
Bromobenzene
1,3-Dichloropropane
Ethylene Dibromide (EDB)

Appendix 3 - 7

Total Coliform Sampling Frequency*

(Source: R 61-58.5(I))

Population Served	Minimum Number of Samples per Month
25 to 1000*	1
1001 to 2500	2
2501 to 3300	3
3301 to 4100	4
4101 to 4900	5
4901 to 5800	6
5801 to 6700	7
6701 to 7600	8
7601 to 8500	9
8501 to 12,900	10
12,901 to 17,200	15
17,201 to 21,500	20
21,501 to 25,000	25
25,001 to 33,000	30
33,001 to 41,000	40
41,001 to 50,000	50
50,001 to 59,000	60
59,001 to 70,000	70
70,001 to 83,000	80
83,001 to 96,000	90
96,001 to 130,000	100
130,001 to 220,000	120
220,001 to 320,000	150
320,001 to 450,000	180
450,001 to 600,000	210
600,001 to 780,000	240
780,001 to 970,000	270
970,000 to 1,230,000	300
1,230,001 to 1,520,000	330
1,520,001 to 1,850,000	360
1,850,001 to 2,270,000	390
2,270,001 to 3,020,000	420
3,020,001 to 3,960,000	450
3,960,001 or more	480

* Includes systems which have at least 15 service connections, but serve fewer than 25 persons.

Appendix 3 - 8

Secondary Maximum Contaminant

(Source: R 61-58.5(O))

Contaminant	Level
Color	15 color units
Chloride	250 mg/L
Copper	1 mg/L
Corrosivity	noncorrosive
Fluoride	2.0 mg/L
Foaming agents	0.5 mg/L
Iron	0.3 mg/L
Manganese	0.05 mg/L
Odor	3 threshold odor number
pH	6.5-8.5
Sulfate	250 mg/L
Total dissolved solids (TDS)	500 mg/L
Zinc	5 mg/L

Appendix 3 - 9

Maximum Contamination Levels for Volatile Synthetic Organic Chemicals

(Source: R 61-58.5(AA))

Contaminant	Level (mg/L)
Benzene	0.005
Carbon Tetrachloride	0.005
1,2-Dichloroethane	0.005
Trichloroethylene	0.005
para-Dichlorobenzene	0.075
1,1-Dichloroethylene	0.007
1,1,1-Trichloroethane	0.20
Vinyl Chloride	0.002

Appendix 3-10

Contaminants Requiring Mandatory Health Effects Language

(Source: R 61-58.6(E))

Trichloroethylene
Carbon Tetrachloride
1,2-Dichloroethane
Vinyl Chloride
Benzene
1,1-Dichloroethylene
Para-dichlorobenzene
1,1,1-Trichloroethane
Fluoride
Lead
Microbiological Contaminants
Total Coliforms
Fecal Coliforms and *E. coli*

SECTION 4

**RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)**

South Carolina Supplement

SECTION 4

RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C (RCRA-C) South Carolina Supplement

Definitions

These definitions were obtained from the South Carolina Hazardous Waste Regulations (SCHWR), Sections R.61-79.124 through R.61-79.279.

- *Active Portion* - that portion of a facility where treatment, storage, or disposal operations are being or have been conducted since 19 November 1980, and that is not a closed portion.
- *Administrator* - the Administrator of the U.S. Environmental Protection Agency (USEPA), or an authorized representative.
- *Ancillary Equipment* - any device including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps, that is used to distribute, meter, or control the flow of hazardous waste from its point of generation to a storage or treatment tank(s), to a point of disposal onsite, or to a point of shipment for disposal offsite.
- *Board* - the South Carolina Board of Health and Environmental Control.
- *Certification* - a statement of professional opinion based upon knowledge and belief.
- *Conditionally Exempt Small Quantity Generator* - a hazardous waste generator that generates less than 100 kg of hazardous waste in a calendar month.
- *Container* - any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled.
- *Contingency Plan* - a document setting out an organized, planned, and coordinated course of action to be followed in case of a fire, explosion, or release of hazardous waste or hazardous waste constituents that could threaten human health or the environment.
- *Department* - the Department of Health and Environmental Control (DHEC).
- *Dike* - an embankment or ridge of either natural or manmade materials used to prevent the movement of liquids, sludges, solids, or other materials.
- *Discharge* - the accidental or intentional spilling, leaking, pumping, pouring, emitting, emptying, or dumping of hazardous waste into or on any land or water.
- *Displacement* - the relative movement of any two sides of a fault measured in any direction.

- *Disposal* - the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituents thereof may enter the environment or be emitted into the air or discharged into any waters, including groundwaters.
- *Disposal Facility* - a facility or part of a facility at which hazardous waste is intentionally placed into or on any land or water, and at which the waste will remain after closure.
- *Existing Facility* - a facility that was in operation or for which construction commenced on or before 19 November 1980.
- *Existing Tank System* - a tank system or component that is used for storage or treatment of hazardous waste and that is in operation, or for which installation commenced on or prior to 14 July 1986.
- *Facility* - any hazardous waste management facility that is subject to regulation under the *RCRA* program and the *Pollution Control Act*.
- *Freeboard* - the vertical distance between the top of a tank or surface impoundment dike and the surface of the waste contained therein.
- *Free Liquids* - liquids that readily separate from the solid portion of a waste under ambient temperature and pressure.
- *Holocene* - the most recent epoch of the Quaternary period, extending from the end of the Pleistocene to the present.
- *Incompatible Wastes* - hazardous waste that is unsuitable for either of the following:
 1. placement in a particular device or facility because it may cause corrosion or decay of containment materials
 2. commingling with another waste or material under uncontrolled conditions because that commingling may produce heat or pressure, fire or explosion, violent reaction, toxic dusts, mists, fumes, gases, or flammable fumes or gases.
- *Individual Generation Site* - the contiguous site at or on which one or more hazardous wastes are generated. An individual generation site, such as a large manufacturing plant, may have one or more sources of hazardous waste but is considered a single or individual generation site if the site or property is contiguous.
- *Landfill* - a disposal facility or part of a facility where hazardous waste is placed in or on land and that is not a pile, a land treatment facility, a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground mine, or a cave.
- *Leachate* - any liquid, including suspended components in the liquid, that has percolated through or drained from hazardous waste.
- *Miscellaneous Unit* - a hazardous waste management unit where hazardous waste is treated, stored, or disposed of that is not a container, tank, surface impoundment, pile, land treatment unit, landfill, incinerator, boiler, industrial furnace, or injection well.

- *Person* - an individual, association, partnership, corporation, municipality, state, Federal, or tribal agency, or an agency or employee thereof.
- *Site* - the land or water area where any facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity.
- *Tank* - a stationary device, designed to contain an accumulation of hazardous waste that is constructed primarily of nonearthen materials that provide structural support.
- *TSDF* - treatment, storage, and disposal facility.

**RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
GUIDANCE FOR SOUTH CAROLINA CHECKLIST USERS**

APPLICABILITY:	REFER TO CHECKLIST ITEMS:
All Installations	4-1 and 4-2
Permits and Notification	4-3 and 4-4
Conditionally Exempt Small Quantity Generators	4-5
Small Quantity Generators	4-6 and 4-7
Generators	4-8 through 4-10
Hazardous Waste Generators - Accumulation Limitations	4-11 and 4-12
Recordkeeping and Reporting Requirements	4-13 through 4-15
Management of Specific Hazardous Wastes	4-16 and 4-17
Containers	4-18 through 4-21
Permitted TSDFs - General Requirements	4-22 through 4-28
Preparedness and Prevention	4-29 through 4-31
Tank Systems	4-32 through 4-37
Permitted Surface Impoundments	4-38 through 4-42
Permitted Waste Piles	4-43 through 4-45
Permitted Land Treatment Units	4-46 and 4-47
Permitted Landfills	4-48 through 4-51
Permitted Incinerators	4-52 through 4-54
Permitted Miscellaneous Units	4-55
Permitted Thermal Treatment	4-56 and 4-57
Permitted Chemical, Physical, and Biological Treatment	4-58

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>ALL INSTALLATIONS</p> <p>4-1. Installations that generate solid waste must determine if the waste is hazardous (SCHWR R.61-79.262.11).</p> <p>4-2. Hazardous waste discharges must be cleaned up (SCHWR R.61-79.262, Subpart H).</p> <p>PERMITS AND NOTIFICATION</p> <p>4-3. Installations that generate, transport, or operate a hazardous waste TSDF must file a notification of that activity (SCHWR R.61-79.270.1).</p> <p>4-4. Installations that operate a hazardous waste TSDF must have a permit (SCHWR R.61-79.270.1 (b)).</p>	<p>Determine if solid wastes generated by the installation are excluded from regulation as hazardous waste.</p> <p>Verify that solid waste determinations are made by the following methods:</p> <ul style="list-style-type: none"> - testing the waste according to methods approved by the Department - applying knowledge of the hazardous characteristic of the waste in light of the materials or processes used. <p>Verify that hazardous waste discharges that occur during generation, processing, or storage are cleaned up according to Federal, state, or local requirements so the hazardous waste discharge no longer presents a hazard to human health or the environment.</p> <p>Verify that the installation has filed a notification with the Department of any generation, transportation, treatment, storage, or disposal of hazardous waste.</p> <p>Determine if the installation operates a hazardous waste TSDF.</p> <p>Verify that the facility is operated in accordance with a valid permit or is complying with interim status standards established by the Department prior to final disposition of a permit application.</p>

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-7. Small quantity generators may accumulate hazardous waste onsite for 180 days or less without a permit or interim status if specific requirements are met (SCHWR R.61-79-262.34(d)).</p>	<p>Verify that the following requirements are met:</p> <ul style="list-style-type: none"> - the quantity of waste never exceeds 6000 kg - containers holding hazardous waste are in good condition and do not leak - if a container is not in good condition (e.g., severe rusting, apparent structural defects) or begins to leak, the hazardous waste is immediately transferred to another container that is in good condition - containers are made of or lined with materials that are compatible with the waste being contained - containers are always closed during storage, except when it is necessary to add or remove waste - containers are not opened, handled, or stored in a manner that may rupture the container or cause it to leak - the date upon which each period of accumulation began is clearly marked on the container - each container is clearly marked HAZARDOUS WASTE - each container is labeled with a USEPA hazardous waste number - waste is not placed in an unwashed container that previously held an incompatible waste or an incompatible material - containers holding a hazardous waste that is incompatible with any waste or materials stored nearby in other containers, piles, open tanks, or surface impoundments are separated from other materials or protected from them by means of a dike, berm, wall, or other device - areas where containers are stored are inspected at least weekly for deterioration or corrosion of the containers - containers holding ignitable or reactive wastes are located at least 15 m (50 ft) from the facility property line - at all times there is at least one person either on premises, or on call, with the responsibility for coordinating all emergency response measures - all employees are thoroughly familiar with proper waste handling and emergency procedures - the following information is posted next to the telephone: <ul style="list-style-type: none"> - the name and telephone number of the emergency coordinator - the location of fire extinguishers and spill control equipment and, if present, the fire alarm - the telephone number of the fire department, unless there is a direct alarm. <p>(NOTE: Small quantity generators that accumulate hazardous waste in amounts exceeding 6000 kg or for more than 180 days are considered hazardous waste storage facilities and subject to all TSDF requirements.)</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>GENERATORS</p> <p>4-8. Installations that generate hazardous waste must meet specific requirements (SCHWR R.61-79.262.12 through .13).</p> <p>4-9. Generators that transport, or offer for transport, hazardous waste must meet specific requirements (SCHWR R.61-79.262 Subpart B and C and 79.263).</p>	<p>Determine if the installation is a conditionally exempt small quantity generator, small quantity generator, or a hazardous waste generator.</p> <p>Verify that hazardous waste generators meet the following requirements:</p> <ul style="list-style-type: none"> - the installation has a USEPA ID No. - hazardous waste is only offered to transporters or treatment, storage, or disposal facilities that possess a USEPA ID No. - notification is sent to the Department when a new type of hazardous waste is generated. <p>Verify that the installation meets the following requirements:</p> <ul style="list-style-type: none"> - the transporter has a USEPA ID No. - a manifest is completed and signed, and copies are provided for the transporter, the designated facility, the Department, secondary transporters, and installation records - each container is marked in accordance with applicable S.C. Public Service Commission regulations and Federal Department of Transportation (DOT) regulations under 49 CFR 172 - containers are marked in accordance with 49 CFR 172.304 - the waste is placarded in accordance with DOT regulations under 49 CFR 172 and S.C. Public Service Commission regulations - each container of 110 gal or less is marked with the following: <p style="padding-left: 40px;">HAZARDOUS WASTE - State and Federal laws prohibit improper storage or disposal. If found, contact the nearest public safety authority or the S.C. Department of Health and Environmental Control.</p> <p>Generator I.D., Wastes Codes, Name, and Address</p> <p>_____</p> <p>_____</p> <p>Manifest Document Number _____</p> <p>Date [accumulation start date] _____</p> <p>Proper DOT Shipping Name _____</p> <p>Hazard Class _____ UN or NA No. _____</p> <p>USEPA Hazardous Waste Number _____</p>

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-10. Installations that transport hazardous waste must submit a quarterly report (SCHWR R.61-79.263.15).</p> <p>HAZARDOUS WASTE GENERATORS - ACCUMULATION LIMITATIONS</p> <p>4-11. Installations that generate hazardous waste may accumulate the waste onsite for 90 days or less without a permit or interim status if specific requirements are met (SCHWR R.61-79.262.34).</p>	<p>Verify that the installation submits a written report to the Department no later than 30 days after the end of each calendar quarter.</p> <p>Verify that hazardous waste is not accumulated onsite for more than 90 days unless the installation has been granted a permit by the Department.</p> <p>Verify that container management meets the following requirements:</p> <ul style="list-style-type: none"> - containers are clearly marked (i.e., visible for inspection) with the date on which each period of accumulation begins - if the container is not in good condition or if it begins to leak, the waste is transferred to a container in good condition, or the waste is managed in some other way - containers are made of or lined with a material that will not react with or is otherwise compatible with the waste stored in them - containers are always closed during storage, except when it is necessary to add or remove waste - containers are not handled or stored in a manner that could cause them to rupture or leak - containers are permanently and legibly marked with the following statement: HAZARDOUS WASTE - State and Federal laws prohibit improper storage or disposal - containers are appropriately labeled with USEPA hazardous waste numbers - storage areas are inspected at least weekly for leaks and deterioration caused by corrosion or other factors - containers holding ignitable or reactive waste are located at least 50 ft from the property line - incompatible wastes or incompatible waste and materials are not placed in the same container, unless the minimum standards for the management of incompatible waste are met

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C (RCRA-C) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
4-11. (continued)	<ul style="list-style-type: none"> - waste is not placed in an unwashed container that previously held an incompatible waste, unless the minimum standards for the management of incompatible waste are met - containers holding a waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, or surface impoundments are separated from the other materials or protected from them by a dike, berm, wall, or other device. <p>(NOTE: Generators storing hazardous waste in tanks must demonstrate through manifests and/or an accumulation log book that the tanks have had a complete turnover of volume within 90 days.)</p> <p>(NOTE: A generator that accumulates hazardous waste for a period of more than 90 days is then considered the operator of a hazardous waste storage facility and is subject to permit requirements of storage facilities.)</p>
4-12. Installations may accumulate up to 55 gal of hazardous waste or 1 qt of acutely hazardous waste at or near the point of generation provided that specific requirements are met (SCHWR R.61-79.262.34(c)).	<p>Verify that the accumulation point meets the following requirements:</p> <ul style="list-style-type: none"> - it is at or near the point where wastes initially accumulate - it is under the control of the operator of the process generating the waste - accumulation is limited to 55 gal of hazardous waste or 1 qt of acutely hazardous waste. <p>Verify that container management at the accumulation point meets the following requirements:</p> <ul style="list-style-type: none"> - if the container is not in good condition, or if it begins to leak, the waste is transferred to a container in good condition, or the waste is managed in some other way - containers are made of or lined with a material that will not react with or are otherwise compatible with the waste stored in them - containers are always closed, except when it is necessary to add or remove waste - containers are marked with the following: HAZARDOUS WASTE - State and Federal laws prohibit improper storage or disposal. If found, contact nearest police or public safety authority or the SC DHEC.

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C (RCRA-C) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
4-12. (continued)	Verify that, when the accumulation limit is reached, the following requirements are met within 3 days: <ul style="list-style-type: none"> - the waste is removed from the accumulation point and managed in compliance with hazardous waste storage requirements - the container is marked with the date the excess began accumulating (i.e., the date the 55 gal or 1 qt limitation was met).
RECORDKEEPING AND REPORTING REQUIREMENTS	
4-13. Installations that generate hazardous waste must meet specific recordkeeping requirements (SCHWR R.61-79.262.40).	Verify that the following requirements are met: <ul style="list-style-type: none"> - a copy of each completed manifest is kept onsite for a period of 3 yr from the date of shipment or a signed copy from the designated facility that received the waste is received - a copy of each manifest returned by the designated facility is kept onsite for a period of 3 yr from the date of receipt of the manifest - a copy of each quarterly report and each exception report is kept onsite for a period of 3 yr from the due date of the report - the records of any test results, waste analyses, or other determinations for a period of 3 yr from the date that the waste was sent to onsite or offsite treatment, storage, or disposal.
4-14. Installations that generate more than 1000 kg of hazardous waste per month and ships the waste to an offsite TSDF within the United States must file a quarterly report (SCHWR R.61-79.262.41).	Verify that the installation submits a written report to the Department no later than 30 days after the end of each calendar quarter.

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-15. Installations that generate more than 1000 kg of hazardous waste per calendar month must submit exception reports under specific circumstances (SCHWR R.61-79.262.42).</p> <p>MANAGEMENT OF SPECIFIC HAZARDOUS WASTES</p> <p>4-16. Installations that use hazardous wastes in a manner that constitutes disposal must meet specific requirements (SCHWR R.61-79.266.20 through.23).</p> <p>4-17. Installations that market used oil or burn used oil for energy recovery must meet specific requirements SCHWR R.61-79.266 Subpart E).</p>	<p>Verify that, if the generator does not receive a copy of the manifest from the designated TSDF within 35 days of the date the waste was accepted by the initial transporter, the designated facility is contacted to determine the status of the shipment.</p> <p>Verify that, if the generator does not receive a copy of the manifest from the designated TSDF within 45 days of the date the waste was accepted by the initial transporter, the installation submits an exception report to the Department.</p> <p>Determine if the installation uses hazardous wastes in a manner that constitutes disposal.</p> <p>Verify that the installation meets all applicable requirements for hazardous waste TSDFs for the disposal method utilized (i.e., land treatment, incineration).</p> <p>Verify that the use of waste or used oil or other material contaminated with dioxin or any other hazardous waste (other than a waste identified on the basis of ignitability) for dust suppression or road treatment is prohibited.</p> <p>Determine that the installation markets used oil or burns used oil for energy recovery.</p> <p>Verify that used oil is marketed only to burners or other marketers that have a USEPA ID No. and have notified the Department of their used oil management activities.</p> <p>Verify that installations that burn used oil meet the following requirements:</p> <ul style="list-style-type: none"> - used oil burned by the generator is analyzed to document that it does not exceed the specifications listed in 40 CFR 266.40 - any invoices received concerning the purchase, use, or marketing of used oil are kept for a period of 3 yr from the date the invoice was received.

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C (RCRA-C) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
CONTAINERS	
4-18. Hazardous waste residues in empty containers must be handled in a specific manner (SCHWR R.61-79.261.7).	<p>Verify that containers which held hazardous waste are handled in the following manner:</p> <ul style="list-style-type: none"> - all wastes have been removed that can be removed using practices commonly employed to remove materials from that type of container (e.g., pouring, pumping, or aspirating) - no more than 2.5 cm (1 in.) or no more than 3 percent by weight of the total capacity of the container, if the container is less than or equal to 110 gal in size, of residue remain on the bottom of the container or inner liner - a container that has held a hazardous waste which is a compressed gas is at a pressure approaching atmospheric. <p>Verify that a container or inner liner from a container which has held an acutely hazardous waste is handled in any of the following ways:</p> <ul style="list-style-type: none"> - the container or inner liner is triple rinsed using a solvent capable of removing the chemical product or chemical intermediate - the container or inner liner is cleaned by a method shown in the scientific literature, or by tests conducted by the generator, to achieve the equivalent of removal - in the case of a container, the inner liner is removed.
4-19. Installations that operate a hazardous waste TSDF must meet specific requirements for the use and management of containers (SCHWR R.61-79.264 Subpart I).	<p>Verify that the following requirements are met:</p> <ul style="list-style-type: none"> - containers holding hazardous waste are in good condition and do not leak - if a container is not in good condition (e.g., severe rusting, apparent structural defects) or begins to leak, the hazardous waste is immediately transferred to another container that is in good condition - containers are made of or lined with materials compatible with the waste being contained - containers are always closed during storage, except when it is necessary to add or remove waste - containers are not opened, handled, or stored in a manner that may rupture the container or cause it to leak - each container is permanently and legibly marked with the following: HAZARDOUS WASTE - State and Federal Laws Prohibit Improper Storage or Disposal - each container is labeled with a USEPA hazardous waste number.

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-19. (continued)</p>	<p>Verify that container storage areas meet the following requirements:</p> <ul style="list-style-type: none"> - areas where containers are stored are inspected at least weekly for deterioration or corrosion of the containers - container storage areas have a containment system designed and operated as follows: <ul style="list-style-type: none"> - the base is sloped or the containment system is otherwise designed to drain and remove liquids resulting from leaks, spills, and accumulated precipitation, unless the containers are elevated or otherwise protected from contact with accumulated liquids - the containment system has sufficient capacity to contain 10 percent of the volume of the containers or the volume of the largest container, whichever is greater - run-on into the containment system is prevented unless the collection system is sufficient to contain any run-on that may enter the system - spilled or leaked waste and accumulated precipitation is removed from the sump or collection area in a timely fashion to prevent overflow. <p>(NOTE: Containers that do not contain free liquids need not be considered in this determination.)</p> <p>(NOTE: Storage areas with containers holding only wastes that do not contain free liquids need not have a containment system if that the storage area is sloped or otherwise designed and operated to drain and remove liquid resulting from precipitation, or the containers are elevated or otherwise protected from contact with accumulated liquid.)</p>
<p>4-20. Installations that operate a hazardous waste TSDF and use containers for hazardous waste must handle incompatible wastes according to specific requirements (SCHWR R.61-79.264. Subpart I).</p>	<p>Verify that incompatible hazardous wastes are handled as follows:</p> <ul style="list-style-type: none"> - waste is not placed in an unwashed container that previously held an incompatible waste or an incompatible material - containers holding a hazardous waste that is incompatible with any waste or materials stored nearby in other containers, piles, open tanks, or surface impoundments are separated from other materials or protected from them by means of a dike, berm, wall, or other device - at closure all hazardous wastes and hazardous waste residues are removed from the containment system, remaining containers, liners bases, or soil containing or contaminated with hazardous waste, or hazardous residues, are decontaminated or removed.

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-21. Installations must take precautions to prevent accidental ignition or reaction of ignitable or reactive wastes (SCHWR R.61-79.264.17).</p>	<p>Verify that the following precautions are taken with ignitable or reactive wastes:</p> <ul style="list-style-type: none"> - the waste is separated and protected from sources of ignition or reaction (e.g., open flames, smoking, cutting or welding, hot surfaces, sparks, or spontaneous ignition) - while ignitable or reactive waste is being handled, smoking and open flame is confined to specially designated locations - NO SMOKING signs are conspicuously placed where there is a hazard from ignitable or reactive waste - during operations where ignitable or reactive waste is treated, stored, or disposed of, or incompatible wastes are mixed, precautions are taken to prevent reactions that: <ul style="list-style-type: none"> - generate extreme heat or pressure, fire or explosion, or violent reaction - produce uncontrolled toxic mists, fumes, dusts, or gases in quantities that threaten human health or the environment - produce uncontrolled flammable fumes or gases in quantities that pose a risk of fire or explosion - damage the structural integrity of the device or facility - through any other like means threaten human health or the environment.
<p>PERMITTED TSDFs - GENERAL REQUIREMENTS</p> <p>4-22. Installations that operate a hazardous waste TSDF must meet specific requirements (SCHWR R.61-79.264.10 through 264.13, and 264.72).</p>	<p>(NOTE: All hazardous waste TSDF requirements in this protocol are applicable to facilities operating with a permit. Interim status facilities should refer to the permit application and the U.S. ECAS Manual for specific operating requirements.)</p> <p>Determine if the installation operates a hazardous waste TSDF.</p> <p>Verify that the facility has a USEPA ID No..</p> <p>Verify that the following waste analysis requirements are met:</p> <ul style="list-style-type: none"> - a detailed chemical and physical analysis of a representative sample of the waste to be treated, stored, or disposed of is obtained - the analysis is repeated as necessary to ensure that it is accurate and up to date - the installation develops and follows a written waste analysis plan.

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-22. (continued)</p>	<p>Verify that the following manifest requirements are met:</p> <ul style="list-style-type: none"> - return a copy of the signed and dated manifest to the generator and the Department within 30 days after delivery - note significant discrepancies in the manifest and attempt to reconcile with the generator and/or transporter - significant discrepancies are reported to the Department if not resolved within 15 days after receiving the waste - retain at the facility a copy of each manifest for at least 3 yr from the date of delivery.
<p>4-23. Installations that operate a hazardous waste TSDF must meet specific recordkeeping and reporting requirements (SCHWR R.61-264.73 through 264.76 and 264.110 through .120).</p>	<p>Verify that the following records are maintained:</p> <ul style="list-style-type: none"> - a written operating record and closure plan for the facility - copies of notices, certifications, and demonstrations - records and results of inspections. <p>Verify that all records are maintained at the facility and are available for inspection.</p> <p>Verify that, if the facility accepts hazardous waste without an accompanying manifest or shipping paper, an unmanifested waste report is submitted to the Department within 15 days of receipt of the waste.</p>
<p>4-24. Installations that operate a hazardous waste TSDF must submit a quarterly report (SCHWR R.61-79.264.75).</p>	<p>Verify that the installation submits a report to the Department no later than 30 days after the end of each calendar quarter.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-25. Installations that operate a hazardous waste TSDf must meet specific location standards (SCHWR R.61-79.264.18).</p> <p>4-26. Installations that operate a hazardous waste TSDf must meet specific security requirements (SCHWR R.61-79.264.14).</p>	<p>Verify that the following standards are met:</p> <ul style="list-style-type: none"> - portions of new facilities where treatment, storage, or disposal operations will be conducted are not located within 61 m (200 ft) of a fault that has had displacement in Holocene time - the placement of any noncontainerized or bulk liquid hazardous waste into salt dome or salt bed formations, underground mines, or caves is not allowed - a facility located in a 100-yr floodplain is designed, constructed, and operated to prevent washout of any hazardous waste by a 100-yr flood, unless it can be demonstrated to the Department that: <ul style="list-style-type: none"> - the waste can be removed before flood waters reach the facility - no adverse effects on human health or the environment will result if a washout occurs. <p>Verify that the possibility for unauthorized entry of persons or livestock to the active portion of the facility is minimized, unless the following can be demonstrated:</p> <ul style="list-style-type: none"> - physical contact with the waste, structures, or equipment within the active portion of the facility will not injure unknowing or unauthorized persons or livestock that may enter the facility - disturbance of the waste or equipment by unknowing or unauthorized entry of persons or livestock will not cause harm. <p>Verify that, if it cannot be demonstrated that contact with the waste will not injure persons or livestock, the facility is equipped with a combination of the following devices:</p> <ul style="list-style-type: none"> - a 24-h surveillance system (e.g., television monitoring or surveillance by guards) that continuously monitors and controls entry onto the active portion of the facility, or - an artificial or natural barrier (e.g., a fence) that completely surrounds the active portion of the facility - a means to control entry, at all times, through the gates or other entrances to the active portion of the facility - a sign with the following legend is posted at each entrance to the active portion of the facility and at other locations in sufficient numbers to be seen from any approach to the active portion of the facility: <ul style="list-style-type: none"> - DANGER - UNAUTHORIZED PERSONNEL KEEP OUT - the legend is written in English and is legible from a distance of at least 25 ft. <p>(NOTE: Existing signs with a different legend may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion of the facility and that entry onto that portion of the facility may be dangerous.)</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-27. Installations that operate a hazardous waste TSDF must meet specific inspection requirements (SCHWR R.61-79.264.15).</p> <p>4-28. Installations that operate a hazardous waste TSDF must meet specific personnel training requirements (SCHWR R.61-79.264.16).</p>	<p>Verify that the following inspection requirements are met:</p> <ul style="list-style-type: none"> - the facility is inspected for malfunctions and deterioration, operator errors, and discharges that may cause the release of hazardous waste or hazardous waste constituents to the environment or threaten human health - inspections are conducted often enough to identify problems in time to correct them before they harm human health or the environment - the installation develops and follows a written schedule for inspecting monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment - the schedule is kept at the facility - the schedule identifies the types of problems to be looked for during inspection - inspections are recorded in a log or summary that is kept for a period of at least 3 yr - at a minimum the inspection log records the time and date of the inspection, name of the inspector, observations made, and the date and nature of any repairs. <p>Verify that the following training requirements are met:</p> <ul style="list-style-type: none"> - facility personnel successfully complete a program of classroom instruction or on-the-job training - at a minimum, the training program is designed to ensure that facility personnel are able to respond to emergencies by familiarizing them with emergency procedures, equipment, and systems - facility personnel complete the training program within 6 mo after the date of their assignment - facility personnel take part in an annual review of initial training - records of each job title and person filling that job are kept - a written job description for each position is kept - a written description of the type and amount of training given each person filling a position is kept - training records on current personnel are kept at the facility until final closure - training records on former personnel are kept for a period of at least 3 yr.

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>PREPAREDNESS AND PREVENTION</p> <p>4-29. Installations that operate a hazardous waste TSDf must meet specific requirements for preparedness and prevention of accidents (SCHWR R.61-79. 264.30 through 264.37).</p>	<p>Verify that facilities are equipped with the following, unless it is demonstrated to the Department that they are not required due to the nature of operations conducted at the facility:</p> <ul style="list-style-type: none"> - an internal communications or alarm system capable of providing immediate emergency instruction - a device, such as a telephone, capable of summoning emergency assistance from local police, fire department, or state and local emergency response teams - portable fire extinguishers, fire control equipment, spill control equipment, and decontamination equipment - water at adequate volume and pressure to supply water hoses, foam producing equipment, or automatic sprinklers. <p>Verify that aisle space is maintained to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of the facility in an emergency, unless it can be demonstrated to the Department that such space is not necessary.</p> <p>Verify that facility personnel have immediate access to an internal alarm or emergency communication device whenever hazardous waste is being poured, mixed, spread, or otherwise handled.</p> <p>Verify that, if there is only one person on the premises while the facility is in operation, he has immediate access to a device (such as a telephone) capable of summoning external emergency assistance.</p> <p>Verify that arrangements have been made to familiarize police, fire departments, local hospitals, and emergency response teams with the layout of the facility and associated hazards, entrances, and roads to the facility.</p> <p>(NOTE: Where state or local authorities decline to enter into such arrangements, this fact must be documented in the facility operating record.)</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-30. Installations that operate a hazardous waste TSDF must develop and follow a contingency plan (SCHWR R.61-79.264.50 through 264.56).</p>	<p>Verify that the installation has a contingency plan that meets the following criteria:</p> <ul style="list-style-type: none"> - designed to minimize hazards to human health and the environment from fires, explosions, or any release of hazardous waste or constituents to the air, soil, or surface water - describes the actions facility personnel are to take in response to such occurrences - describes arrangements for emergency response made with local police, fire departments, state and local emergency response teams, and hospitals - lists names, addresses, and telephone numbers for all persons qualified to act as an emergency coordinator - lists all emergency equipment at the facility, including the location and physical description of the equipment - includes a plan for the evacuation of facility personnel if there is a possibility that an evacuation may be necessary. <p>Verify that a copy of the contingency plan is maintained at the facility and submitted to all police, fire departments, and state and local services which would provide emergency services.</p>
<p>4-31. Installations that operate a hazardous waste TSDF must have an emergency coordinator (SCHWR R.61-79.264.55).</p> <p>TANK SYSTEMS</p> <p>4-32. Installations that operate a hazardous waste TSDF that utilize tank systems must meet specific requirements to assess the integrity of the tanks (SCHWR R.61-79.264.191).</p>	<p>Verify that at all times there is at least one person on the premises or on call with the responsibility for coordinating all emergency response measures and implementing the contingency plan.</p> <p>Determine if the installation utilizes tank systems to treat, store, or dispose of hazardous wastes.</p> <p>Verify that the following requirements are met:</p> <ul style="list-style-type: none"> - for each existing tank system with no secondary containment, determine that the tank system is not leaking or unfit for use - a written assessment of the tank system's integrity, reviewed and certified by a qualified registered professional engineer, is kept on file. <p>(NOTE: Installations that install new tank systems as part of a hazardous waste TSDF must submit a written assessment of the system's integrity with the permit application.)</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-33. Installations that operate a hazardous waste TSDF using tank systems must have secondary containment (SCHWR R.61-79.264.193).</p>	<p>(NOTE: All tank systems must have secondary containment within 2 yr of 12 January 1987 or by the time the system is 15 yr old, whichever is later.)</p> <p>Verify that secondary containment systems meet the following requirements:</p> <ul style="list-style-type: none"> - designed, installed, and operated to prevent the migration of wastes and accumulated liquid out of the system to the soil, groundwater, or surface water - capable of detecting and collecting releases and accumulated liquids until the collected material is removed - constructed or lined with materials compatible with the wastes stored - has sufficient strength and thickness to prevent failure due to pressure gradients, physical contact with the wastes, climatic conditions, and the stress of daily operation - placed on a foundation or base capable of providing support, resisting pressure gradients above and below the system, and capable of preventing failure due to compression, settlement, or uplift - has a leak-detection system that will detect the failure of either the primary or secondary containment structure or the presence of any release or accumulated liquid in the secondary containment system within 24 h - is sloped or otherwise operated to drain and remove liquids resulting from leaks, spills, or precipitation - includes one or more of the following devices: a liner (external to the tank), a vault, a double-walled tank, or an equivalent Department-approved device. <p>Verify that double-walled tanks meet the following requirements for secondary containment:</p> <ul style="list-style-type: none"> - they are designed as an integral structure (i.e., an inner tank completely enveloped within an outer shell) so any release from the inner tank is contained - if constructed of metal, protected from both corrosion of the primary tank interior and of the external surface of the outer shell - provided with a built-in continuous leak detection system capable of detecting a release within 24 h, or the earliest practicable time. <p>Verify that ancillary equipment is provided with secondary containment.</p> <p>(NOTE: The following types of ancillary equipment do not require secondary containment:</p> <ul style="list-style-type: none"> - aboveground piping that is visually inspected for leaks on a daily basis - welded flanges, welded joints, and welded connections that are visually inspected for leaks each day - sealless or magnetic coupling pumps and sealless valves that are inspected for leaks daily - pressurized aboveground piping systems with automatic shutoff devices that are inspected for leaks daily.)

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-34. Installations that operate a hazardous waste TSDF using tank systems must meet general operating requirements (SCHWR R.61-79.264.194, .198, and .199).</p>	<p>Verify that the following operational requirements are met:</p> <ul style="list-style-type: none"> - hazardous wastes or treatment reagents are not placed into the tank system if they could cause the tank, its ancillary equipment, or the containment system to rupture, leak, corrode, or otherwise fail - appropriate controls and practices to prevent spills and overflows from the tank and containment system are used, including: <ul style="list-style-type: none"> - spill prevention controls (e.g., check valves, dry disconnect couplings) - maintenance of sufficient freeboard in uncovered tanks - overflow prevention controls (e.g., level sensing devices, high level alarms) - incompatible wastes, or incompatible wastes and materials are not placed into the same tank system - hazardous waste is not placed in a tank that previously held an incompatible waste or material and has not been decontaminated - ignitable or reactive waste is not placed into the tank system unless: <ul style="list-style-type: none"> - the waste is treated, rendered, or mixed before or immediately after placement so it no longer meets the definition of ignitable or reactive waste; or - the waste is stored or treated in a way to protect it from any material or conditions that may cause it to ignite or react - the tank system is used solely for emergencies.
<p>4-35. Installations that operate a hazardous waste TSDF using tank systems must meet specific inspection requirements (SCHWR R.61-79.264.195).</p>	<p>Verify that the installation develops and follows a schedule and procedure for inspecting overflow controls.</p> <p>Verify that the following inspection requirements are met each day:</p> <ul style="list-style-type: none"> - aboveground portions of the tank system, if any, to detect corrosion or releases of waste - data gathered from monitoring equipment and leak detection equipment to ensure the tank system is operated according to its design - construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system, to detect signs of erosion or signs or releases of hazardous waste (e.g., wet spots, dead vegetation). <p>Verify that cathodic protection systems, if present, are inspected according to the following schedule:</p> <ul style="list-style-type: none"> - proper operation of the cathodic protection system is confirmed within 6 mo after initial installation and annually thereafter - all sources of impressed current are inspected and/or tested bimonthly. <p>Verify that inspections are documented in the operating record of the facility.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-36. Installations that operate a hazardous waste TSDF using tank systems must follow specific procedures in response to leaks, spills, and disposition of leaking or unfit-for-use tank systems (SCHWR R.61-79.264.196).</p>	<p>Determine if the installation has had a leak or spill, or if it has a tank system that is unfit for use.</p> <p>Verify that the following procedures are then followed:</p> <ul style="list-style-type: none"> - the flow of hazardous waste into the tank system is immediately ceased - the system is inspected to determine the cause of the release - all hazardous waste is removed from the tank system - all released material is removed within 24 h - further migration of released material to soils or surface water is prevented - any visible contamination of soil or surface water is removed and properly disposed of as a hazardous waste - the spill or release is reported to the Department within 24 h. <p>(NOTE: A leak or spill of hazardous waste is exempt from these requirements if it is less than or equal to 1 lb and it is immediately cleaned up.)</p>
<p>4-37. Installations that operate a hazardous waste TSDF using tank systems must meet specific requirements for closure and postclosure care (SCHWR R.61-79.264.197).</p> <p>PERMITTED SURFACE IMPOUNDMENTS</p> <p>4-38. Installations that use surface impoundments to treat, store, or dispose of hazardous waste must meet specific design and operating requirements (SCHWR R.61-79.264.221).</p>	<p>Determine that the installation has closed a hazardous waste tank system.</p> <p>Verify that the following procedures are followed:</p> <ul style="list-style-type: none"> - all waste residues are removed or decontaminated - all contaminated containment system components, contaminated soils, structures, and equipment are removed or decontaminated <p>Determine if the installation utilizes surface impoundments to treat, store, or dispose of hazardous waste.</p> <p>Verify that the surface impoundment has a liner designed, constructed, and installed to prevent the migration of any waste out of the impoundment into the adjacent sub-surface or groundwater or surface water.</p> <p>Verify that the liner meets the following additional requirements:</p> <ul style="list-style-type: none"> - it is constructed of materials of sufficient strength and thickness to prevent failure due to pressure gradients, physical contact with the waste or leachate, climatic conditions, or the stress of installation and daily operation

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
4-38. (continued)	<ul style="list-style-type: none"> - it is placed upon a foundation or base capable of providing support to the liner, is resistant to pressure gradients, and prevents failure of the liner due to settlement, compression, or uplift - it is installed to cover all surrounding earth likely to be in contact with the wastes or leachate - new surface impoundments have a system of two or more liners with a leachate collection system between the liners - the surface impoundment has dikes that are designed, constructed, and maintained to prevent massive failure; and for earthen dikes, it has an outside protective cover to minimize erosion by wind and water - the impoundment is designed and constructed such that the bottom of any liner system is at least 5 ft above the seasonal high water table.
<p>4-39. Installations that operate hazardous waste surface impoundments must meet specific monitoring and inspection requirements (SCHWR R.61-79.264.226).</p>	<p>Verify that during construction and installation surface impoundment liners are inspected for the following:</p> <ul style="list-style-type: none"> - uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, foreign materials) - immediately after installation the liner is inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters - soil-based and admixed liners are inspected for imperfections including lenses, cracks, channels, root holes, or other structural nonuniformities. <p>Verify, that while in operation, the surface impoundment is inspected weekly and after storms to detect evidence of the following:</p> <ul style="list-style-type: none"> - deterioration, malfunctions, or improper operation of overtopping control systems - sudden drops in the level of the contents - severe erosion or other signs of deterioration in dikes or other containment devices.
<p>4-40. Installations that operate hazardous waste surface impoundments must meet specific requirements for ignitable, reactive, and special wastes (SCHWR R.61-79.264.229 through .231).</p>	<p>Verify that ignitable, reactive, or incompatible wastes are not placed into a surface impoundment.</p> <p>Verify that hazardous wastes F020, F021, F022, F023, F026, and F027 are not placed into the surface impoundment unless it is operated in accordance with a management plan approved by the Department.</p>

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-41. Installations must have a contingency plan for emergency repair of a surface impoundment under specific circumstances (SCHWR R.61-79.264.227).</p> <p>4-42. Installations that operate hazardous waste surface impoundments must meet specific requirements at closure of the facility (SCHWR R.61-79.264.228).</p>	<p>Verify that the installation has a contingency plan that specifies procedures for removing the impoundment from service immediately under emergency conditions.</p> <p>Verify that the installation removes the surface impoundment from service when:</p> <ul style="list-style-type: none"> - the level of liquids in the impoundment suddenly drops and the drop is not known to be caused by changes in the flow into or out of the impoundment - the dike leaks. <p>Verify that, at the time of closure of the surface impoundment, the following requirements are met:</p> <ul style="list-style-type: none"> - all waste residues are removed or decontaminated from contaminated containment system components, contaminated subsoils, structures, and equipment are treated as hazardous waste - all free liquids are eliminated by removal or by solidifying them - stabilize remaining wastes to a bearing capacity sufficient to support final cover - cover the impoundment with a final cover designed and constructed to meet the following requirements: <ul style="list-style-type: none"> - provide long-term minimization of migration of liquids through the impoundment - function with minimum maintenance - promote drainage and minimize erosion of final cover - accommodate settling and subsidence so the cover's integrity is maintained - has a permeability less than or equal to that of any bottom liner or natural subsoil.
<p>PERMITTED WASTE PILES</p> <p>4-43. Installations that operate a hazardous waste TSDF that utilizes waste piles must meet specific design and operating requirements (SCHWR R.61-79.264.251, .256, .257, and .259).</p>	<p>Determine if the installation operates a hazardous waste TSDF that utilizes waste piles.</p> <p>Verify that the waste pile meets the following requirements:</p> <ul style="list-style-type: none"> - the pile is under a structure that provides protection from precipitation so neither runoff nor leachate is generated - liquids or materials containing free liquids are not placed in the pile - the pile is protected from surface water run-on by a structure or in some other manner

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-43. (continued)</p>	<ul style="list-style-type: none"> - the pile is designed and operated to control dispersal of the waste by wind by means other than wetting - the pile will not generate leachate through decomposition or other reactions. <p>(NOTE: Only waste piles that do not meet these requirements must meet the additional requirements listed in this section.)</p> <p>Verify that the pile has a liner designed, constructed, and installed to prevent the migration of wastes out of the pile to the adjacent subsurface soil or groundwater.</p> <p>Verify that the liner meets the following requirements:</p> <ul style="list-style-type: none"> - it is constructed of materials of appropriate strength to prevent failure due to pressure gradients, physical contact with the wastes, and the stress of installation and daily operation - it is placed on a foundation or base capable of providing support to the liner, providing resistance to pressure gradients above and below the liner, and preventing failure due to uplift, compression, or settlement - covers all surrounding earth likely to be in contact with the waste or leachate. <p>Verify that the leachate collection and removal system is installed immediately above the liner.</p> <p>Verify that the leachate depth over the liner does not exceed 30 cm (1 ft).</p> <p>Verify that ignitable or reactive wastes are not placed into the pile.</p> <p>Verify that incompatible wastes or incompatible wastes and materials are not placed into the same pile.</p> <p>Verify that a pile of waste incompatible with any other waste or material stored nearby in containers, other piles, open tanks, or surface impoundments is separated from the other materials or protected by means of a dike, berm, wall, or other device.</p> <p>Verify that hazardous wastes F020, F021, F022, F023, F026, and F027 are not placed into the pile unless the pile is approved by the Department to handle such wastes.</p>
<p>4-44. Installations that operate a hazardous waste TSDF that use waste piles must meet specific monitoring and inspection requirements (SCHWR R.61-79.264. 254).</p>	<p>Verify that the following requirements are met:</p> <ul style="list-style-type: none"> - during construction or installation, liners are inspected for uniformity, damage, and imperfections - while in operation, a waste pile is inspected weekly and after storms to detect deterioration, malfunctions, improper operation of run-on and runoff controls, wind dispersal controls, and the presence of leachate in and proper functioning of the leachate collection system.

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C (RCRA-C) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-45. Installations that operate a hazardous waste TSDf that uses waste piles must meet specific requirements for closure and postclosure care (SCHWR R.61-79.264.258).</p>	<p>Determine if the installation is closing or has closed a hazardous waste pile.</p> <p>Verify that all waste residues, contaminated containment system components, contaminated subsoils, structures, and equipment are removed or decontaminated upon closure of the waste pile.</p>
<p>PERMITTED LAND TREATMENT UNITS</p> <p>4-46. Installations that operate a hazardous waste TSDf using land treatment units must meet specific design and operational requirements (SCHWR R.61-79.264.271, .273, and .281 through .283).</p>	<p>Determine if the installation operates a hazardous waste TSDf utilizing land treatment units.</p> <p>Verify that the following requirements are met:</p> <ul style="list-style-type: none"> - the land treatment plan is followed - the land treatment unit is operated to maximize the degradation, transformation, and immobilization of hazardous constituents in the treatment zone - runoff of hazardous constituents is minimized - a run-on and runoff control system capable of preventing flow onto the treatment zone during peak discharge from at least a 25-yr storm is installed - collection and holding facilities associated with run-on and runoff control systems are emptied or otherwise managed expeditiously after storms - if the treatment zone contains particulate matter subject to wind dispersal, the unit is managed to control wind dispersal - the unit is inspected weekly and after storms to detect deterioration, malfunctions, and improper operation of run-on and runoff controls and wind dispersal controls - an unsaturated zone monitoring program is established and followed - ignitable or reactive wastes are not placed into the land treatment unit - incompatible wastes, or incompatible wastes and materials are not placed into the same treatment zone - hazardous wastes F020, F021, F022, F023, F026, and F027 are not placed into the land treatment unit unless approved by the Department - hazardous waste application dates and rates are recorded in the operating record.

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-47. Installations that operate a hazardous waste TSDF using land treatment units must meet specific requirements at closure and for postclosure care (SCHWR R.61-79.264.280).</p>	<p>Verify that the following requirements are met:</p> <ul style="list-style-type: none"> - all operations necessary to maximize degradation, transformation, or immobilization of hazardous constituents within the treatment zone are continued - run-on and runoff control systems are maintained - wind dispersal of hazardous waste is controlled - prohibitions concerning growing of food-chain crops are maintained - unsaturated zone monitoring is continued - a vegetative cover capable of maintaining growth without extensive maintenance is established - certification by an independent soil scientist that the facility has been closed in accordance with the approved closure plan is submitted to the Department. <p>(NOTE: The installation is not required to establish a vegetative cover or obtain certification if it is demonstrated to the Department that the level of hazardous constituents in the treatment zone does not exceed the background value of those constituents.)</p>
<p>PERMITTED LANDFILLS</p> <p>4-48. Installations that operate a hazardous waste TSDF using landfills must meet specific design and operating requirements (SCHWR R.61-79.264.301, and .312 through .317).</p>	<p>Determine if the installation operates a landfill for the treatment, storage, or disposal of hazardous waste.</p> <p>Verify that the following requirements are met:</p> <ul style="list-style-type: none"> - the landfill has a liner designed, constructed, and installed to prevent any migration of wastes out of the landfill to the adjacent soil or groundwater or surface water with a leachate collection system installed above the liner - new landfills, new landfill units at existing facilities, and lateral expansions of landfill units have two or more liners and a leachate collection system above and between the liners. <p>(NOTE: A landfill, landfill unit, or lateral expansion is new if it began operation or construction had commenced after 21 October 1976.)</p> <p>Verify that the following requirements are met:</p> <ul style="list-style-type: none"> - ignitable or reactive wastes are not placed into the landfill - incompatible wastes, or incompatible wastes and materials are not placed into the same landfill cell unless they are treated so they no longer meet the definition incompatible wastes

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-48. (continued)</p>	<ul style="list-style-type: none"> - bulk or noncontainerized liquid hazardous waste or hazardous waste containing free liquids (whether or not absorbents have been added) are not placed into the landfill - containers are at least 90 percent full when placed into the landfill or are crushed, shredded, or similarly reduced in volume to the maximum extent practical before burial - containers holding free liquids are not placed into the landfill unless: <ul style="list-style-type: none"> - all freestanding liquid has been removed - has been mixed with absorbent or solidified so that freestanding liquid is no longer present - the container is very small such as an ampule - the container is designed to hold free liquids for use other than storage, such as a battery or capacitor - the container is an overpacked drum (lab pack) - any liquid that is not a hazardous waste is not placed into the landfill without approval from the Department - hazardous wastes F020, F021, F022, F023, F026, and F027 are not placed into the landfill unless approved by the Department.
<p>4-49. Installations that operate a hazardous waste TSDF using landfills must meet specific requirements for the disposal of hazardous wastes in over-packed drums (lab packs) (SCHWR R.61-79.264.316).</p>	<p>Verify that the following requirements are met:</p> <ul style="list-style-type: none"> - hazardous wastes are packaged in nonleaking inside containers - inside containers are made of materials that will not react dangerously with, be decomposed by, or be ignited by the contained wastes - inside containers are tightly and securely sealed - the inside container is overpacked in an open head DOT specification metal shipping container surrounded by a sufficient quantity of absorbent material to completely absorb all of the liquid contents inside - the metal outer container is full after packing with the inside container and absorbent material - the absorbent material is not capable of reacting dangerously with, being decomposed by, or being ignited by the wastes contained - incompatible wastes are not placed inside the same container - reactive wastes are rendered nonreactive prior to packaging.

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-50. Installations that operate a hazardous waste TSDF using landfills must meet specific monitoring, inspection, and record-keeping requirements (SCHWR R.61-79.264.303 and .309).</p>	<p>Verify that the following requirements are met:</p> <ul style="list-style-type: none"> - liners are inspected during installation for uniformity, damage, and imperfections - while the landfill is in operation it is inspected weekly and after storms to detect the following: <ul style="list-style-type: none"> - deterioration, malfunction, or improper operation of the run-on and runoff control systems - proper functioning of wind dispersal controls, where present - the presence of leachate in and the proper functioning of leachate collection and removal systems. <p>Verify that the following records are kept:</p> <ul style="list-style-type: none"> - the exact location and dimensions of each cell - the contents of each cell - the date and volume or quantity of leachate that was withdrawn from the cell.
<p>4-51. Installations that operate a hazardous waste TSDF using landfills must meet specific requirements for closure and postclosure care (SCHWR R.61-79.264.310).</p> <p>PERMITTED INCINERATORS</p> <p>4-52. Installations that operate hazardous waste incinerators must have a permit (SCHWR R.61-79.264.340 through .344).</p>	<p>Verify that the following requirements are met:</p> <ul style="list-style-type: none"> - the landfill is covered with a final cover designed to: <ul style="list-style-type: none"> - provide long-term minimization of migration of liquid through the closed landfill - function with minimum maintenance - promote drainage - accommodate settling - has a permeability less than or equal to the bottom liner system - continue to operate the leachate collection and removal system until leachate is no longer detected - prevent run-on and runoff from eroding or damaging the final cover - maintain and monitor the groundwater monitoring system. <p>Determine that the installation operates an incinerator for the treatment or disposal of hazardous waste.</p> <p>Verify that the incinerator is operated in accordance with the specifications of the permit.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>4-53. Installations that operate hazardous waste incinerators must meet specific monitoring and inspection requirements (SCHWR R.61-79.264.347).</p>	<p>Verify that the following requirements are met:</p> <ul style="list-style-type: none"> - combustion temperature, waste feed rate, and combustion gas velocity are monitored on a continuous basis - carbon monoxide is monitored on a continuous basis - the incinerator and associated equipment (e.g., pumps, valves, pipes) are visually inspected daily for leaks, spills, fugitive emissions, and signs of tampering - the emergency waste cutoff system and associated alarms are tested at least weekly to verify operability unless less frequent inspection is approved by the Department. <p>Verify that all monitoring and inspection data is recorded in the operating log of the facility.</p>
<p>4-54. Installations that operate hazardous waste incinerators must remove all hazardous residues at closure of the facility (SCHWR R.61-79.264.351).</p>	<p>Verify that at closure the installation removes all hazardous waste and hazardous waste residues from the incinerator site.</p>
<p>PERMITTED MISCELLANEOUS UNITS</p>	
<p>4-55. Installations that operate miscellaneous units for the treatment, storage, or disposal of hazardous waste must meet specific environmental performance standards (SCHWR R.61-79.264.601).</p>	<p>Determine that the installation operates a miscellaneous unit for the treatment, storage, or disposal of hazardous waste.</p> <p>Verify that the unit is located, designed, constructed, operated, maintained, and closed in a manner that will ensure protection of human health and the environment.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>PERMITTED THERMAL TREATMENT</p> <p>4-56. Installations that operate a hazardous waste TSDF using thermal treatment must meet specific operating requirements (SCHWR R.61-79.265.371 and, .381 through .383).</p> <p>4-57. Installations that operate a hazardous waste TSDF using thermal treatment must meet specific monitoring and inspection requirements (SCHWR R.61-79.265.377).</p>	<p>Determine that the installation operates a thermal treatment unit for the treatment or disposal of hazardous waste.</p> <p>Verify that, prior to adding hazardous waste, the thermal treatment process is brought to steady state operating temperature using auxiliary fuel or other means, unless the process is a noncontinuous (batch) thermal treatment process that requires a complete cycle to treat a discrete quantity of hazardous waste.</p> <p>Verify that the following requirements are met:</p> <ul style="list-style-type: none"> - the open burning of hazardous waste is prohibited, except for the open burning and detonation of waste explosives - hazardous wastes F020, F021, F022, F023, F026, and F027 are not treated without certification from the Department - at closure all hazardous wastes and hazardous waste residues are removed from the thermal treatment process or equipment. <p>Verify that the following requirements are met:</p> <ul style="list-style-type: none"> - existing instruments that relate to temperature and emission control are monitored every 15 min while the unit is in operation - stack plume emissions, where present, are observed visually at least hourly for normal appearance (color and opacity) - the complete thermal treatment process and associated equipment are inspected daily for leaks, spills, and fugitive emissions - all emergency shutdown controls and system alarms are checked daily to assure proper operation.

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE C (RCRA-C)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>PERMITTED CHEMICAL, PHYSICAL, AND BIOLOGICAL TREATMENT</p> <p>4-58. Installations that operate a hazardous waste TSDf using chemical, physical, or biological treatment must meet specific operating requirements (SCHWR R.61-79.265.400 through .405).</p>	<p>Determine if the installation utilizes chemical, physical, or biological methods to treat hazardous waste.</p> <p>Verify that the following requirements are met:</p> <ul style="list-style-type: none"> - hazardous wastes or treatment reagents are not placed in the treatment process or equipment if they could cause the process or equipment to rupture, leak, corrode, or otherwise fail before the end of its intended life - where hazardous waste is continuously fed into a treatment process or equipment, the process or equipment is equipped with a means to stop the inflow - ignitable or reactive wastes are not placed into the treatment process or equipment unless the material is treated in a way that it no longer meets the definition of ignitable or reactive wastes - incompatible wastes or incompatible waste and materials are not placed into the treatment process or equipment - the following inspections are carried out: <ul style="list-style-type: none"> - discharge control and safety equipment, each operating day - monitoring equipment, at least once each day - the construction materials of the treatment process or equipment, at least weekly to detect corrosion or leaks - the construction materials of, and the area around, discharge confinement structures to detect erosion or obvious signs of leakage - hazardous waste is not placed into unwashed treatment equipment that previously held an incompatible waste - at closure, all hazardous wastes and hazardous waste residues are removed from the process equipment.

INSTALLATION:	COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE C (RCRA-C) South Carolina Supplement	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

SECTION 5

**RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)**

South Carolina Supplement

SECTION 5

RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D (RCRA-D) South Carolina Supplement

Definitions

The definitions were taken from the following regulations: *South Carolina Solid Waste Policy and Management Act of 1991*, Regulations 61-107.10, 61-105, 61-107.5, 61-107.258.2, 61-107.7(B), 61-107.3(B), 61-107.4(B), 61-107.9 (B), 61-107.5(B), 61-107.8(B), and 61-107.258.28.

- **Active Life** - the period of municipal solid waste landfill (MSWL) operation beginning with the initial receipt of solid waste and ending at completion of closure activities.
- **Active Portion** - that part of a MSWL facility or unit that has received or is receiving wastes and has not been closed.
- **Ash** - the solid residue from the incineration of solid waste.
- **Backyard Composting** - the onsite composting of yard waste from residential, commercial, or industrial property by the owner or tenant for nonrevenue-generating use when all materials are generated and composted onsite.
- **Biodegradable** - capable of being decomposed by natural biological processes.
- **Board** - the South Carolina Board of Health and Environmental Control, charged with implementing the *Infectious Waste Management Act*.
- **Buffer** - the space between two entities reserved for nonactivity.
- **Certification** - a statement of professional opinion based upon knowledge and belief.
- **Closure** - the discontinuance of operation by ceasing to accept, treat, store, or dispose of solid waste so that the need for further maintenance is minimized and human health and the environment are protected. The term applies to solid waste processing facilities, solid waste transfer stations, municipal solid waste incineration, or municipal solid waste pyrolysis facilities and construction, demolition, and land-clearing debris landfills.
- **Collection** - the act of picking up solid waste materials from homes, businesses, governmental agencies, institutions, or industrial sites.
- **Commercial Solid Waste** - all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial wastes.
- **Compost** - the humus-like end product of the process of composting waste.
- **Composting** - the process of making compost.

- *Composting Facility* - any facility used to provide aerobic, thermophilic decomposition of the solid organic constituents of solid waste to produce a stable, humus-like material.
- *Composting Pad* - a surface, whether soil or manufactured, at which the process of composting takes place and raw and finished materials are stored.
- *Construction* - any physical modification to the site where a potential or proposed solid waste management facility is to be located, including, but not limited to, site preparation.
- *Construction and Demolition Debris* - discarded solid wastes resulting from construction, remodeling, repair and demolition of structures, road building, and land-clearing. The wastes include, but are not limited to, bricks, concrete and other masonry materials, soil, rock, lumber, road spoils, paving material, and tree and brush stumps but does not include solid waste from agricultural or silvicultural operations.
- *Container* - any portable device where a material is stored, transported, treated, disposed of, or otherwise managed.
- *Containment* - the packaging of infectious waste or the containers in which infectious waste is placed.
- *Contingency Plan* - a document setting out an organized, planned, and coordinated course of action to be followed in case of fire, explosion, release of infectious waste or infectious waste constituents, or interruption of normal procedures of infectious waste management. For solid waste processing facilities, a document acceptable to the Department setting out an organized, planned, and coordinated course of action to be followed at or by the facility in case of a fire, explosions, or other incidents that could threaten human health and safety or the environment.
- *Cover* - soil or other suitable material acceptable to the Department, or both, used to cover compacted solid waste in a land disposal site.
- *Degradable* - with respect to any material, means that the material, after being discarded, is capable of decomposing to components other than heavy metals or other toxic substances after exposure to bacteria, light, or outdoor elements.
- *Department* - for state infectious waste requirements, the South Carolina Department of Health and Environmental Control (DHEC), including personnel of the Department authorized by the Board to act on behalf of the Department or Board.
- *Destination Facility* - an infectious waste treatment facility that has received a permit from the Department or an appropriate out-of-state facility and is the facility designated by the generator as the place where waste will be transported.
- *Discharge* - for infectious waste, the accidental or intentional spilling, leaking, pumping, pouring, emitting, emptying, or dumping of infectious waste into or onto any land or waters of the state, including groundwater. For solid waste, the accidental or intentional spilling, leaking, pumping, pouring, emitting, emptying, or dumping of solid waste, including leachate, into or on any land or water.
- *Disposal* - the discharge, deposition, injection, dumping, spilling, or placing of any solid waste into or on any land or water so the substance or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters.

- **Dispose** - to discharge, deposit, inject, dump, spill, leak, or place any waste into or on any land or water, including groundwater, so the substance may enter the environment, or be emitted into the air, or discharged into any waters, including groundwater.
- **Existing Municipal Solid Waste Landfill Unit** - any MSWL unit that is receiving solid waste as of 9 October 1993. Waste placement in existing units must be consistent with past operating practices or modified practices to ensure good management.
- **Expand** - an increase in the capacity of the facility or an increase in the quantity of infectious waste received by a facility that exceeds a permit condition.
- **Expansion** - the process of increasing existing capacity of operations at an existing solid waste transfer station site, when such an increase is in conformity with the area served and the scope of operations of the original permit.
- **Facility** -
 1. for infectious waste requirements, a location or site where infectious waste is treated, stored and/or disposed of
 2. for solid waste municipal landfill requirements, all contiguous land and structures, other appurtenances and improvements on the land used for the disposal of solid waste
 3. for construction, demolition, and land-clearing debris landfills, all contiguous land, structures, other appurtenances and improvements on the land used for treating, storing, or disposing of solid waste. A facility may consist of several treatment, storage, or disposal operational units, including, but not limited to, one or more landfills, surface impoundments, or a combination thereof.
- **Floodplain** - the lowland and relatively flat areas adjoining inland and coastal areas of the mainland and offshore islands, including, at a minimum, areas subject to a 1 percent or greater chance of flooding in any given year.
- **Gas Condensate** - the liquid generated as a result of gas recovery processes at the MSWL unit.
- **Generator** - the person producing infectious waste, except waste produced in a private residence.
- **Generator Facility** - a facility that treats infectious waste and is owned or operated by a combination or association of generators, a nonprofit professional association representing generators, or a nonprofit corporation controlled by generators, nonprofit foundation of hospitals, or nonprofit corporations wholly owned by hospitals, if the waste is generated in South Carolina and treatment is provided on a nonprofit basis.
- **Groundwater** - for MSWL requirements, water below the land surface in a zone of saturation.
- **Hazardous Waste** - a hazardous waste as defined in R.61-79.261 Subpart A, Section 261.3 of the South Carolina Hazardous Waste Management Regulations. For solid waste transfer stations and construction, demolition, and land-clearing debris landfills, the meaning provided in Section 44-56-20 of the *South Carolina Hazardous Waste Management Act*.
- **High Water Table** - the highest water levels measured in onsite monitoring wells for a period consisting of four consecutive quarters.

- **Household Waste** - any solid waste, including garbage, trash, and sanitary waste in septic tanks, derived from households, including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas.
- **Hygienically** - promoting health; sanitary.
- **Incineration** - the use of controlled flame combustion to thermally break down solid, liquid, or gaseous combustible wastes, producing residue that contains little or no combustible materials.
- **Incinerator** - any engineered device used in the process of controlled combustion of waste for the purpose of reducing the volume of the waste by destroying the combustible matter, leaving the noncombustible ashes or residue.
- **Industrial Solid Waste** - solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of RCRA. The term does not include mining waste or oil and gas waste. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes:
 1. electric power generation
 2. fertilizer/agricultural chemicals
 3. food and related products/byproducts
 4. inorganic chemicals
 5. iron and steel manufacturing
 6. leather and leather products
 7. nonferrous metals manufacturing/foundries
 8. organic chemicals
 9. plastics and resins manufacturing
 10. pulp and paper industry
 11. rubber and miscellaneous plastic products
 12. stone, glass, clay, and concrete products
 13. textile manufacturing
 14. transportation equipment
 15. water treatment.
- **Infectious Waste** - any used material generated in the health care community in the diagnosis, treatment, immunization, or care of human beings. It is used material generated in autopsy or necropsy or in research pertaining to the production of biologicals that have been exposed to human pathogens. It also is used material generated in research using human pathogens and includes all the following:
 1. sharps, defined as any discarded article that may cause punctures or cuts, including but not limited to needles, syringes, Pasteur pipettes, lancets, broken glass, and scalpel blades
 2. specimens, cultures, and stocks of etiological agents, including but not limited to waste that has been exposed to human pathogens in the production of biologicals, discarded live and attenuated vaccines, culture dishes/devices used to transfer, inoculate, and mix cultures
 3. all waste unabsorbed human blood, blood products, or absorbed blood when the absorbent is supersaturated, including but not limited to serum, plasma, and other components of blood and visibly bloody body fluids such as suctioned fluids, excretions, and secretions

4. all tissues, organs, limbs, and other body parts removed from the whole body, excluding tissues that have been preserved with formaldehyde or other approved preserving agents, and the body fluids that universal precautions apply to:
 - a. cerebrospinal fluids
 - b. synovial fluid
 - c. pleural fluid
 - d. peritoneal fluid
 - e. pericardial fluid
 - f. amniotic fluid
 - g. semen
 - h. vaginal secretions
5. animal carcasses, body parts, and bedding when the animal has been intentionally exposed to human pathogens in research or the production of biologicals
6. all waste generated from communicable disease isolation of the Class Four, highly communicable diseases, pursuant to the *Guidelines for Isolation Precautions in Hospitals*, published by the Centers for Disease Control and Prevention (CDC)
7. any other material designated by written generator policy as infectious, or any other material designated by a generator as infectious by placing the material into a container labeled infectious
8. any solid waste that is mixed with infectious waste becomes designated as infectious, unless excluded
9. any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill of any infectious waste.

The following are not infectious waste:

1. hazardous waste that is to be managed pursuant to the Hazardous Waste Management Regulations, R. 61-79, as amended
 2. radioactive waste that is managed pursuant to the Department Regulation 61-63, *Radioactive Material* (Title A)
 3. mixed waste containing regulated quantities of either or both hazardous or radioactive waste are to be managed pursuant to all applicable regulations
 4. infectious wastes generated in a private residence, except when determined by the Commissioner of the Department or his authorized agent to be an imminent or substantial hazard to public health or the environment
 5. etiologic agents or specimens being transported for purposes other than disposal to a laboratory consistent with shipping and handling requirements of the U.S. Department of Transportation (DOT), the U.S. Department of Health and Human Services, and all other applicable requirements
 6. human corpses, remains, and anatomical parts that are intended to be interred, cremated, or donated for medical research
 7. teeth returned to a patient
 8. infectious waste samples transported offsite by the U.S. Environmental Protection Agency (USEPA) or the Department for possible enforcement actions, or transportations of materials from other governmental response actions.
- *Infectious Waste Management* - the systematic control of the collection, source separation, storage, transportation, treatment, and disposal of infectious waste.
 - *Intermediate Handling Facility* - any transportation-related facility, including loading docks, parking areas, storage areas, and other similar areas where shipments of infectious waste are held and/or handled for storage during the normal course of transportation and where they may be off loaded and on loaded.

- **Land-Clearing Debris** - solid waste that is generated solely from land-clearing activities but does not include solid waste from agricultural or silvicultural operations.
- **Landfill** - a disposal facility or part of a facility where solid waste is placed in or on land and that is not a land treatment facility, a surface impoundment, or an injection well.
- **Lateral Expansion** - a horizontal expansion of the waste boundaries of an existing MSWL unit.
- **Leachate** - the liquid that has percolated through or drained from solid waste or other man-emplaced materials and contains soluble, partially soluble, or miscible components removed from such waste. For MSWL requirements, a liquid that has passed through or emerged from solid waste and contains soluble, suspended, or miscible materials removed from such waste.
- **Lead Acid Battery** - any battery that consists of lead and sulfuric acid, is used as a power source and has a capacity of 6 V or more, except that this term does not include a small, sealed lead acid battery that means a lead acid battery weighing 25 lb or less, used in nonvehicular, non-SLI (start lighting ignition) applications.
- **Lead Acid Battery Collection Facility** - a facility authorized by the Department to accept lead acid batteries from the public for temporary storage before recycling.
- **Liquid Waste** - any waste material determined to contain free liquids.
- **Manifest** - the shipping document originated and signed by the generator that contains required information.
- **Materials Recovery Facility** - a solid waste management facility that provides for the extraction from solid waste of recoverable materials, materials suitable for use as a fuel or soil amendment, or any combination of such materials.
- **Mesophyllic Stage** - a biological stage in the composting process characterized by active microorganisms that favor a moderate temperature range of 20 to 45 °C (68 to 113 °F). It occurs later in compost processing after the thermophilic stage and is associated with a moderate rate of decomposition.
- **Motor Vehicle** - an automobile, motorcycle, truck, trailer, semi-trailer, truck tractor and semi-trailer combination, or any other vehicle operated on the roads of this state, used to transport persons or property, and propelled by power other than muscular power, but not including traction engines, road rollers, vehicles run only upon a track, bicycles, mopeds, farm tractors, and trailers.
- **Mulch** - wood chips, leaves, straw, etc., spread on the ground around plants to prevent evaporation of water from soil, freezing of roots, etc.
- **Municipal Solid Waste** - any solid waste, such as garbage and sanitary waste in septic tanks, derived from households, including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas, generated by commercial establishments such as stores, offices, restaurants, warehouses, and other nonmanufacturing activities except industrial facilities, and nonhazardous sludge.

- *Municipal Solid Waste Incinerator* - any solid waste incinerator, publicly or privately owned, that receives household waste. The incinerator may receive other types of solid waste, such as commercial or industrial solid waste.
- *Municipal Solid Waste Landfill (MSWL)* - for yard trash, land-clearing debris, and compost requirements, any sanitary landfill or landfill unit, publicly or privately owned, that receives household waste. The landfill may also receive other types of solid waste, such as commercial waste, nonhazardous sludge, and industrial solid waste.
- *Municipal Solid Waste Landfill (MSWL) Unit* - a discrete area of land or an excavation that receives household waste and that is not a land application unit, surface impoundment, injection well, or waste pile. An MSWL unit also may receive other types of RCRA subtitle D wastes, such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. This landfill may be publicly or privately owned. An MSWL unit may be a new MSWL unit, an existing MSWL unit, or a lateral expansion.
- *New Municipal Solid Waste Landfill (MSWL) Unit* - any MSWL unit that has not received waste prior to 9 October 1993.
- *Nonputrescible* - solid waste that contains no putrescible waste.
- *Offsite* - not onsite.
- *Onsite* - the same or geographically contiguous property that may be divided by public or private right-of-way provided the entrance and exit between the properties is at a crossroads intersection and access is by crossing as opposed to going along the right-of-way.
- *Open Burning* - the combustion of solid waste without control of combustion air to maintain adequate temperature for efficient combustion, without containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion, and without control of the emission of the combustion products.
- *Open Dumping* - any unpermitted solid waste disposal activity.
- *Operator* -
 1. for solid waste processing facility, composting, and/or wood-chipping facility and transfer stations requirements, the person responsible for the overall operation of the facility
 2. for MSWL requirements, any person who is principally engaged in, or is in charge of, the actual operation, supervision, and maintenance of a solid waste management facility, including the person in charge of a shift or period during any part of the day.
- *Permit* - the process the Department uses to ensure cognizance of, as well as control over, the management of solid wastes.
- *Person* - an individual, corporation, company, association, partnership, unit of local government, state agency, Federal agency, or other legal entity.
- *Processed Tire* - a waste tire that has been cut, shredded, burned, or otherwise altered so it is no longer whole.

- *Putrescible* - solid waste composed of items, such as foods, that will decompose and rot to produce a foul-smelling odor.
- *Pyrolysis* - the chemical decomposition of a material by heat in the absence of oxygen.
- *Quantity* - means either volume or actual number of tires. For purposes of the waste tire requirements, assume there are 100 tires/ton and 10 whole tires/yd³.
- *Recovered Materials* - materials that have known use, reuse, or recycling potential; can be feasibly used, reused, or recycled; and have been diverted or removed from the solid waste stream for sale, use, reuse, or recycling, whether or not requiring subsequent separation and processing; does not include materials when recycled or transferred to a different site for recycling in an amount that does not equal at least 75 percent by weight of materials received during the previous calendar year.
- *Recovered Materials Processing Facility* - a facility engaged solely in the recycling, storage, processing and resale, or reuse of recovered materials. The term does not include a solid waste handling facility. However, any solid waste generated by such a facility is subject to solid waste requirements.
- *Residual* - any liquid, sludge, metal, fabric, or byproduct resulting from the processing or storage of tires. Residual does not include processed tires held for recycling or disposal.
- *Resource Recovery* - the process of obtaining material or energy resources from solid waste that no longer has any useful life in its present form and preparing the waste for recycling.
- *Resource Recovery Facility* - a combination of structures, machinery, or devices used to separate, process, modify, convert, treat, or prepare collected solid waste so component materials, substances, or recoverable resources may be used as a raw material or energy source.
- *Runoff* - any rainwater, leachate, or other liquid that drains over land from any part of a facility.
- *Run-On* - any rainwater, leachate, or other liquid that drains over land onto any part of a facility.
- *Saturated Zone* - that part of the earth's crust where all voids are filled with water.
- *Silviculture Waste* - waste materials produced from the care and cultivation of forest trees, including bark and wood chips.
- *Sludge* - any solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial waste water treatment plant, water supply treatment plant, or air pollution control facility exclusive of the treated effluent from a waste water treatment plant.
- *Small Quantity Generator* - in-state generators that produce less than 50 lb of infectious waste per calendar month.

- ***Solid Waste -***

1. any garbage, refuse, or sludge from a waste treatment facility, water supply plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agriculture operations and from community activities. This term does not include solid or dissolved material in domestic sewage, solid or dissolved materials in irrigation return flows, industrial discharges that are point sources subject to Federal permits, or source, special nuclear, or byproduct material as defined by the *Atomic Energy Act of 1954*, as amended.
2. for collection, temporary storage and transportation of municipal solid waste, solid waste processing facilities, transfer stations, municipal solid waste incineration and municipal solid waste pyrolysis facilities, and composting and/or wood-chipping facilities, solid waste does not include recovered materials or application of fertilizer and animal manure during normal agricultural operations or refuse as defined and regulated pursuant to the *South Carolina Mining Act*, including processed mineral waste, that will not have a significant adverse impact on the environment
3. for composting and/or wood-chipping facilities and collection, temporary storage, and transportation of municipal solid waste requirements, the term does not include dissolved materials in irrigation return flows or industrial discharges that are point sources subject to state permits.

- ***Solid Waste Handling Facility*** - any facility engaged in the handling of solid waste.

- ***Solid Waste Management*** - for municipal solid waste incineration and municipal solid waste pyrolysis facilities and solid waste research, development, and demonstration facilities, systematic control of the generation, collection, source separation, storage, transportation, treatment, recovery, and disposal of solid waste.

- ***Solid Waste Management Facility*** - any solid waste disposal area, volume reduction plant, transfer station, or other facility that has the purpose of storage, collection, transportation, treatment, utilization, processing, recycling, disposal, or any combination thereof, of solid waste. The term does not include a recovered materials processing facility or facilities that use or ship recovered materials, except the portion of the facilities managing solid waste. Applies to municipal solid waste incineration and municipal solid waste pyrolysis facilities; solid waste research, development, and demonstration facilities; solid waste processing facilities; composting and wood-chipping facilities; and solid waste transfer stations.

- ***Solid Waste Processing Facility*** - a combination of structures, machinery, or devices used to reduce or alter the volume, chemical, or physical characteristics of solid waste through processes such as baling or shredding before delivery of such waste to a recycling or resource recovery facility or to a solid waste treatment, storage, or disposal facility, and excludes collection vehicles.

- ***Solid Waste Storage Container*** - large receptacles such as green boxes or dumpsters used as a central collection point for the temporary storage of solid waste. This term does not include storage containers used by a single family unit or to regulated litter receptacles. Any solid waste storage container used at a food service facility, regardless of size, is subject to collection, temporary storage, and transportation of municipal solid waste container requirements.

- **Special Waste** - nonresidential or commercial solid wastes, other than regulated hazardous wastes, that are either difficult or dangerous to handle and require unusual management at MSWLs, including, but not limited, to:
 1. pesticide wastes
 2. liquid wastes and bulk liquid wastes
 3. sludges
 4. wastes generated as a direct or indirect result of the manufacture of a product or the performance of a service, including, but not limited to, spent pickling liquors, cutting oils, chemical catalysts, distillation bottoms, etching acids, equipment cleanings, point sludges, core sands, metallic dust sweepings, asbestos dust, and off-specification, contaminated, or recalled wholesale or retail products; but excluding uncontaminated packaging materials, uncontaminated machinery components, landscape waste and construction, or demolition debris
 5. wastes from a pollution control process
 6. residue or debris from the cleanup of a spill or release of chemical substances, commercial products, or wastes listed in this definition
 7. soil, water, residue, debris, or articles that are contaminated from the cleanup of a facility or site formerly used for the generation, storage, treatment, recycling, reclamation, or disposal of wastes listed in this definition
 8. containers and drums.
- **State** - the State of South Carolina.
- **Storage** - the actual or intended holding of infectious wastes, either on a temporary basis or for a period of time, in a manner as not to constitute disposing of the wastes.
- **Structural Integrity** - the ability of a unit to withstand physical forces exerted upon designed components, appurtenances, and containment structures, such as liners and dikes, of the unit.
- **Supersaturated** - the condition when any absorbent material contains enough fluid so it freely drips that fluid or, if lightly squeezed, that fluid would drip from it.
- **Surface Water** - lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic Ocean within territorial limits, and all other bodies of surface water, natural or artificial, inland or coastal, fresh, or salt, public or private.
- **Temporarily** - for the purposes of the requirements for waste tires, a time period of less than 30 days.
- **Temporary Storage** - the containment of solid waste for a period of not more than 7 days before the ultimate disposal of the waste, such as green boxes for temporary storage of solid waste.
- **Thermophilic Stage** - a biological stage in the composting process characterized by active microorganisms that favor a high temperature range of 45 to 75 °C (113 to 167 °F). It occurs early in a composting process before the mesophyllic stage and is associated with a high rate of decomposition.
- **Tire** - a continuous solid or pneumatic rubber covering encircling the wheel of a motor vehicle, trailer, or motorcycle. It does not include an industrial press-on tire, with a metal or solid compound rim, that may be retooled.
- **Tire Disposal** - to deposit, dump, spill, or place any waste tire, processed tire, or residuals into or upon any land or water.

- ***Tire Recycling*** - any process where waste tires, processed tires, or residuals are reused or returned to use in the form of products or raw materials.
- ***Transfer Facility*** - any transportation-related facility at which shipments of infectious waste are held during the normal course of transportation, but are not off loaded or on loaded into fixed storage areas.
- ***Transfer Station*** - a combination of structures, machinery, or devices at a place or facility where solid waste is taken from collection vehicles and placed in other transportation units, with or without reduction of volume, for movement to another solid waste management facility.
- ***Transport*** - the movement of infectious waste from the generation site to a treatment facility or site for intermediate storage and/or disposal. For solid waste transfer stations, the movement of solid waste from the point of generation to any intermediate point, and then to the point of ultimate processing, treatment, storage, or disposal.
- ***Transporter*** - a person engaged in the offsite transportation of infectious waste by air, rail, highway, or water.
- ***Transport Vehicle*** - a motor vehicle or rail car used for the transportation of cargo by any mode. Each cargo-carrying body, such as a trailer or railroad freight car, is a separate transport vehicle.
- ***Treatment*** - a method, technique, or process designed to change the physical, chemical, or biological character or composition of infectious waste to sufficiently reduce or eliminate the infectious nature of the waste.
- ***Treatment Facility*** - a facility that treats infectious waste to sufficiently reduce or eliminate the infectious nature of the waste.
- ***Untreated Wood Waste*** - wood that has not undergone any type of treatment for preservation, etc.
- ***Universal Biohazard Symbol*** - the symbol design that conforms to the design shown in 29 Code of Federal Regulations (CFR) 1910.145(f)(8)(ii).
- ***Uppermost Aquifer*** - the geologic formation nearest the natural ground surface that is an aquifer, as well as, lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary.
- ***Used Lead Acid Battery*** - a battery that is of no use in its present state. This includes batteries that are regulated as spent lead acid batteries being reclaimed.
- ***Vector*** - a carrier capable of transmitting a pathogen from one organism to another including, but not limited to, flies and other insects, rodents, birds, and vermin. For yard trash, land-clearing debris and compost requirements, an animal or insect that may transmit disease-producing organisms from one host to another.
- ***Vehicle*** - any motor vehicle, water vessel, railroad car, airplane, or other means of transporting solid waste.
- ***Vertical Expansion*** - an expansion of an existing waste management unit above previously permitted elevations to gain additional capacity.

- **Waste Tire** - a whole tire no longer suitable for its originally intended purpose because of wear, damage, or defect.
- **Waste Tires for Agricultural Purposes** - waste tires generated during the normal production of plants and livestock and are kept onsite for beneficial re-use.
- **Waste Tire Collection Site** - a permitted site, or a site exempted from the permit requirement, used for the temporary storage of waste tires before treatment or recycling.
- **Waste Tire Disposal Facility** - a site at which waste tires are disposed of by burial or are recycled.
- **Waste Tire Hauler** - whoever is engaged in the picking up or transporting of greater than 120 waste tires per year for the purpose of storage, processing, or disposal.
- **Waste Tire Processing Facility** - a site at which equipment is used to recapture reusable byproducts from waste tires or to cut, burn, or otherwise alter whole waste tires so they are no longer whole. The term includes mobile waste tire processing equipment.
- **Waste Tire Site** - an establishment, site, or place of business, without a collector or processor permit, that is maintained, operated, used, or allowed to be used for the disposal, storing, or depositing of unprocessed used tires but does not include a truck service facility that meets the following requirements:
 1. all vehicles serviced are owned or leased by the owner or operator of the service facility
 2. no more than 200 waste tires are accumulated for a period of not more than 30 days at a time
 3. the facility does not accept any tires from other sources
 4. all waste tires are stored under a covered structure.
- **Waters of the State** - lakes, bays, sounds, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic Ocean within the territorial limits and all other bodies of surface or underground water, including natural or artificial, public or private, inland or coastal, fresh or salt, that are wholly or partially within or bordering the state, or within its jurisdiction.
- **Wetlands** - areas delineated and defined specifically as wetlands, according to the methodology accepted by the U.S. Army Corps of Engineers (USACE) and the USEPA.
- **White Goods** - refrigerators, ranges, water heaters, freezers, dishwashers, trash compactors, washers, dryers, air conditioners, and commercial large appliances.
- **Windrow** - an elongated compost pile.
- **Yard Trash** - also known as yard waste, means solid waste consisting solely of vegetative matter resulting from landscaping maintenance.

**RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
GUIDANCE FOR SOUTH CAROLINA CHECKLIST USERS**

APPLICABILITY:	REFER TO CHECKLIST ITEMS:
Municipal Solid Waste Landfills (MSWLs)	5-1 through 5-4
MSWL - Location	5-5 and 5-6
MSWL - Operating Criteria	5-7 through 5-23
MSWL - Design Criteria	5-24 through 5-27
MSWL - Groundwater Monitoring Requirements	5-28
MSWL - Closure and Postclosure Care	5-29 through 5-33
Construction, Demolition, and Land-Clearing Debris Landfills - Permits	5-34
Construction, Demolition, and Land-Clearing Debris Landfills - Existing	5-35
Construction, Demolition, and Land-Clearing Debris Landfills - Design and Operation	5-36 through 5-44
Asbestos Disposal	5-45
Municipal Solid Waste - Collection, Temporary Storage, and Transportation	5-46 through 5-50
Municipal Solid Waste - Storage Containers	5-51
Municipal Solid Waste - Collection and Transportation Vehicles	5-52
Transfer Stations	5-53 through 5-63
Waste Tires	5-64 and 5-65
Waste Tires - Haulers	5-66
Waste Tires - Disposal Facilities	5-67 through 5-75
Yard Waste, Land-Clearing Debris, and Compost	5-76 through 5-87
White Goods - General	5-88 through 5-90
Lead Acid Batteries	5-91 through 5-93
Solid Waste Processing Facilities	5-94 through 5-96
Solid Waste Incineration	5-97

**RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
GUIDANCE FOR SOUTH CAROLINA CHECKLIST USERS
(continued)**

APPLICABILITY:

**REFER TO
CHECKLIST ITEMS:**

Infectious Waste - Permits	5-98 through 5-100
Infectious Waste - Permit-By-Rule	5-101
Infectious Waste - Generators	5-102 through 5-105
Infectious Waste - Small Quantity Generators	5-106 through 5-112
Infectious Waste - Management	5-113 through 5-116
Infectious Waste - Packaging	5-117 through 5-123
Infectious Waste - Labeling	5-124 through 5-127
Infectious Waste - Storage	5-128 and 5-129
Infectious Waste - Transporters	5-130 through 5-147
Infectious Waste - Treatment	5-148 through 5-151
Infectious Waste - Treatment Facilities	5-152 through 5-163

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>MUNICIPAL SOLID WASTE LANDFILLS (MSWLs)</p> <p>5-1. MSWL units that receive waste after 9 October 1991 but stop receiving waste before 9 October 1993 must meet specific requirements (R. 61-107.258.1(c)).</p> <p>5-2. MSWL units receiving waste on or after 9 October 1993 must meet specific requirements (R. 61-107.258.1(d)).</p> <p>5-3. Vertical expansions of MSWL units must meet specific requirements (R. 61-107.258.1(f)).</p> <p>5-4. MSWL units must meet specific requirements for permits (R. 61-107.258.1(g), 258.75(a), and 258.91(a)).</p>	<p>Determine if the MSWL unit received waste after 9 October 1991 but stopped receiving waste before 9 October 1993.</p> <p>Verify that the MSWL unit meets the closure and postclosure care requirements.</p> <p>Verify that the final cover is installed within 6 mo of the last receipt of wastes.</p> <p>(NOTE: MSWL unit operators who fail to complete cover installation within the 6-mo period are subject to all MSWL requirements, unless otherwise specified.)</p> <p>Verify that all MSWL units receiving waste on or after 9 October 1993 meet MSWL requirements.</p> <p>Verify that any vertical expansion of a MSWL unit involves only those portions of the MSWL unit that received waste before 9 October 1993 and have received waste consistent with past operating practices.</p> <p>(NOTE: The Department may allow vertical expansion of an existing MSWL unit for up to 2 yr after 9 October 1993.)</p> <p>Verify that a permit is obtained before construction and operation of a new MSWL unit or a lateral expansion of an existing MSWL unit.</p> <p>Verify that all permit conditions, including the groundwater monitoring plan, are met.</p>
<p>MSWL - LOCATION</p> <p>5-5. MSWL units must not pose a bird hazard to aircraft (R. 61-107.258.10).</p>	<p>Verify that operators of new or existing MSWL units and lateral expansions located within 10,000 ft of the end of any airport runway used by turbojet aircraft or within 5000 ft of the end of any airport runway used by only piston-type aircraft demonstrate that the unit does not pose a bird hazard to aircraft.</p> <p>Verify that the demonstration is placed in the operating record.</p>

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D (RCRA-D) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
5-5. (continued)	<p>(NOTE: Operators proposing to site new MSWL units and lateral expansions within a 5-mi radius of the end of any airport runway used by turbojet or piston-type aircraft must notify the affected airport and the Federal Aviation Administration (FAA).)</p> <p>(NOTE: <i>Airport</i> means public use airport open to the public without prior permission and without restrictions. <i>Bird Hazard</i> means an increase in the likelihood of bird/aircraft collisions that may cause damage to the aircraft or injury to its occupants.)</p>
<p>5-6. Existing MSWL units that cannot meet specific requirements must close by 9 October 1996 (R. 61-107.258.16).</p>	<p>Verify that existing MSWLs meet the following requirements or close by 9 October 1996:</p> <ul style="list-style-type: none"> - demonstrate that the existing unit which is located within 10,000 ft of the end of any airport runway used by turbojet aircraft or within 5000 ft of the end of any airport runway used by only piston-type aircraft is designed and operated so the unit does not pose a bird hazard to aircraft - demonstrate that the unit located in a 100-yr floodplain will not restrict the flow of the 100-yr flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste that would pose a hazard to human health and the environment - demonstrate that engineering measures have been incorporated into the unit's design to ensure that the integrity of the structural components of the unit located in an unstable area are not disrupted. <p>(NOTE: The deadline for closure may be extended up to 2 yr.)</p>
<p>MSWL - OPERATING CRITERIA</p>	
<p>5-7. MSWL unit operators must implement a program for detecting and preventing disposal of regulated hazardous wastes and polychlorinated biphenyls (PCBs) wastes at their facilities (R. 61-107.258.20(a) and (b)).</p>	<p>Verify that the facility operator implements a program for detecting and preventing the disposal of regulated hazardous wastes and PCB wastes that includes all the following:</p> <ul style="list-style-type: none"> - random inspections of incoming loads unless the operator takes other steps to ensure that incoming loads do not contain regulated hazardous wastes or PCB wastes - records of inspections - training of facility personnel to recognize regulated hazardous wastes and PCB wastes - notification of the Department if a regulated hazardous waste or PCB waste is discovered at the facility.

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-8. MSWL unit operators must implement a program for regulating the receipt of special wastes (R. 61-107. 258.20(c)).</p>	<p>Verify that the facility has a program for regulating the receipt of special wastes.</p>
<p>5-9. MSWL unit operators must have written approval from the Department before accepting special waste for disposal (<i>South Carolina Solid Waste Policy and Management Act of 1991</i>, Section 44-96-390(B) and (C)).</p>	<p>Verify that special waste is not disposed of or accepted for disposal at a MSWL without prior written approval from the Department.</p> <p>(NOTE: A facility may apply to the Department at any time for modifications or additions to the types of special waste disposed of or methods for disposal.)</p>
<p>5-10. MSWL unit operators must prepare and submit a special wastes analysis plan (<i>South Carolina Solid Waste Policy and Management Act of 1991</i>, Section 44-96-390(D)).</p>	<p>Verify that the MSWL unit operator has submitted a special wastes analysis plan to the Department or will do so not later than 6 mo after the initial receipt of wastes.</p>
<p>5-11. MSWLs must meet specific requirements for cover materials (R. 61-107.258.21).</p>	<p>Verify that disposed solid waste is covered with 6 in. of earthen material at the end of each operating day, or at more frequent intervals if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging.</p> <p>(NOTE: Materials of an alternative thickness may be approved by the Department.)</p> <p>Verify that the facility has an adequate quantity of acceptable earth cover material for routine operations that meets all the following conditions:</p> <ul style="list-style-type: none"> - is easily workable and compactible - is free of large objects that could hinder compaction - does not contain organic matter conducive to the harborage and/or breeding of vectors or nuisance animals.

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D (RCRA-D) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
5-12. MSWL units must meet specific requirements for disease vector control (R. 61-107.258.22).	<p>Verify that the facility prevents or controls onsite populations of the following disease vectors using techniques appropriate for the protection of human health and the environment:</p> <ul style="list-style-type: none"> - rodents - flies - mosquitoes - other animals capable of transmitting disease to humans - insects capable of transmitting disease to humans.
5-13. MSWL unit operators must meet specific requirements for explosive gases control (R. 61-107.258.23).	<p>Verify that the concentration of methane gas generated by the facility does not exceed 25 percent of the lower explosive limit for methane in facility structures, excluding gas control or recovery system components.</p> <p>Verify that the MSWL unit operator ensures that the concentration of methane gas does not exceed the lower explosive limit for methane at the facility property boundary.</p> <p>(NOTE: <i>Lower explosive limit</i> is the lowest percent by volume of a mixture of explosive gases in air that will propagate a flame at 25 °C and atmospheric pressure.)</p> <p>Verify that the facility implements a routine methane monitoring program with a minimum frequency of quarterly monitoring.</p> <p>Verify that, if methane gas levels exceed concentration limits, all the following requirements are met:</p> <ul style="list-style-type: none"> - all necessary steps are taken immediately to ensure protection of human health and the Department is notified - the methane gas levels detected and a description of the steps taken to protect human health are placed in the operating record within 7 days of detection - a remediation plan is implemented and placed in the operating record.
5-14. MSWLs must meet specific requirements for air criteria (R. 61-107.258.24).	<p>Verify that the facility does not violate any applicable requirements developed under a State Implementation Plan.</p> <p>Verify that no open burning occurs at a MSWL unit.</p> <p>Verify that Departmental approval is obtained before infrequent burning of any of the following:</p> <ul style="list-style-type: none"> - agricultural wastes - silvicultural wastes - land-clearing debris

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
5-14. (continued)	<ul style="list-style-type: none"> - diseased trees - debris from emergency cleanup operations.
<p>5-15. MSWL units must meet specific requirements for access (R. 61-107.258.25).</p>	<p>Verify that blowing litter is controlled at a MSWL unit, and the facility is policed as necessary to remove any accumulations of blown litter.</p> <p>Verify that public access is controlled and unauthorized vehicular traffic and illegal dumping is prevented.</p> <p>Verify that an all-weather access road to the site is provided.</p> <p>Verify that salvaging and scavenging are not allowed at the unit's working face at any time.</p>
<p>5-16. MSWL units must meet specific requirements for run-on and run-off control systems (R. 61-107.258.26).</p>	<p>Verify that the facility has a run-on control system to prevent flow onto the active portion of the landfill during the peak discharge from a 25-yr storm.</p> <p>Verify that the facility has a runoff control system from the active portion of the landfill to collect and control at least the water volume resulting from a 24-h, 25-yr storm.</p> <p>Verify that runoff from the active portion of the landfill meets surface water requirements for MSWL units.</p>
<p>5-17. MSWL units must meet specific surface water requirements (R. 61-107.258.27).</p>	<p>Verify that MSWL units do not cause the discharge of a nonpoint source of pollution to waters of the United States, including wetlands, that violates any requirement of an area wide or statewide water quality management plan.</p>
<p>5-18. MSWL units must meet restrict the disposal of liquids (R. 61-107.258.28).</p>	<p>Verify that the only liquid waste placed in the unit is liquid household waste other than septic waste.</p> <p>Verify that containers holding liquid waste which are placed in a MSWL unit meet one of the following conditions:</p> <ul style="list-style-type: none"> - the container is small and similar in size to that normally found in household waste - the container is designed to hold liquids for use other than storage - the waste is household waste. <p>(NOTE: Leachate and gas condensate derived from the facility may be disposed of on a temporary basis with Department approval.)</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-19. MSWL units must meet specific recordkeeping requirements (R. 61-107.258.29).</p>	<p>Verify that the operating record contains the following information:</p> <ul style="list-style-type: none"> - any required location restriction demonstrations - inspection records, training procedures, and notification procedures that pertain to regulated hazardous wastes and special wastes - gas monitoring results and any remediation plans - any demonstration, certification, finding, monitoring, testing, or analytical data required under permit conditions for groundwater monitoring and corrective action - closure and postclosure care plans and any monitoring, testing, or analytical data - results of any environmental monitoring or testing. <p>(NOTE: The Department may set alternative schedules for recordkeeping and notification requirements.)</p> <p>Verify that the operating record is maintained near the facility or in a Department-approved location.</p>
<p>5-20. MSWL units must install and/or maintain scales for incoming waste (R. 61-107.258.30).</p>	<p>Verify that the facility maintains scales capable of accurately determining the weight of incoming waste streams.</p> <p>(NOTE: Existing facilities that can demonstrate a legitimate financial hardship may be exempted from the requirement to install scales.)</p>
<p>5-21. MSWL supervision and inspection must meet specific requirements (R. 61-107.258.32(a) and (c)).</p>	<p>Verify that MSWL unit supervision is the responsibility of a qualified individual who has MSWL operation experience and has completed Department-approved operator training courses.</p> <p>Verify that any necessary corrective work identified in a Department inspection of a MSWL unit project is performed.</p>
<p>5-22. A legal document or permit must be obtained before initial receipt of MSWL leachate at a wastewater treatment facility (R. 61-107.258.33).</p>	<p>Verify that either a legal document certifying acceptance of leachate by a wastewater treatment facility or a state pollutant discharge elimination system permit is obtained before initial receipt of waste at the facility.</p>

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-23. MSWL operators must use their best efforts to make sure the leachate head above the liner system does not exceed 1 ft (R. 61-107.258.34).</p> <p>MSWL - DESIGN CRITERIA</p> <p>5-24. New MSWL units and lateral expansions must meet specific construction requirements (R. 61-107.258.40(a), (c), (d), (e), (f), (k), and (q)).</p> <p>5-25. MSWL units must have a permanent survey benchmark of known elevation (R. 61-107.258.40 (j)).</p> <p>5-26. The soil component for a MSWL liner system must meet specific requirements (R. 61-107.258.40(l)).</p>	<p>Verify that the municipal solid waste operator makes his/her best effort to make sure the leachate head above the liner system does not exceed 1 ft, except for brief periods not to exceed 1 week.</p> <p>Verify that new MSWL units and lateral expansions are constructed in accordance with a Department-approved design.</p> <p>Verify that the total thickness of the drainage and protective layers above the liner material are a minimum of 2 ft thick and are composed of material with a minimum hydraulic conductivity of 1×10^{-4} cm/s.</p> <p>Verify that all material used in the leachate collection and removal system of the landfill are designed to ensure that the hydraulic leachate head on the liner system does not exceed 1 ft as a result of a 24-h, 25-yr storm event during the active life and postclosure period of the landfill facility.</p> <p>Verify that a separation of 3 ft is maintained between the base of the constructed liner system and the high water table as it exists naturally.</p> <p>(NOTE: The Department may approve other landfill designs.)</p> <p>Verify that one permanent survey benchmark of known elevation measured from a U.S. Geological Survey benchmark is established and maintained at the MSWL unit site, and that this benchmark is used as the reference point for establishing horizontal and vertical elevation control.</p> <p>Verify that the soil component of the liner system meets all the following conditions:</p> <ul style="list-style-type: none"> - is placed on a slope of no less than 2 percent to promote positive drainage across the liner surface and at a maximum slope not greater than 33 percent to facilitate construction - compaction is performed by properly controlling the moisture content, lift thickness and other necessary details to obtain satisfactory results.

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-27. Stormwater ditches for MSWL units must meet specific requirements (R. 61-107.258.40(n)).</p> <p>MSWL - GROUNDWATER MONITORING REQUIREMENTS</p> <p>5-28. New and existing MSWL units and lateral expansions must meet groundwater monitoring requirements (R. 61-107.258.50 and 258.51).</p> <p>MSWL - CLOSURE AND POSTCLOSURE (CARE)</p> <p>5-29. MSWL operators must prepare a written closure plan (R. 61-107.258.60(c), (d) and (e)).</p> <p>5-30. MSWL unit operators must meet specific requirements when beginning closure activities for a unit (R. 61-107.258.60(f)).</p>	<p>Verify that all stormwater ditches have a minimum slope of 0.5 percent or a minimum permissible nonsilting velocity of 2 ft/s.</p> <p>Verify that all existing MSWL units and lateral expansions meet the groundwater monitoring requirements by 9 October 1994.</p> <p>Verify that the installation meets Department-approved requirements for groundwater sampling and analysis.</p> <p>Verify that the MSWL operator prepares a written closure plan describing the steps necessary to close each unit at any point during its active life.</p> <p>Verify that the Department is notified by 9 October 1993 or by the initial receipt of waste, whichever is later, that the closure plan is completed and placed in the operating record.</p> <p>(NOTE: The Department may approve other landfill closure plans.)</p> <p>Verify that the operator begins closure activities by one of the following:</p> <ul style="list-style-type: none"> - no later than 30 days after the date the unit receives the known final receipt of wastes - if the unit has remaining capacity and there is reasonable likelihood the unit will receive additional wastes, no later than 1 yr after the most recent receipt of wastes.

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-31. MSWL operators must meet specific requirements for completing closure activities (R. 61-107.258.60(g)).</p> <p>5-32. MSWL operators must meet specific requirements following closure (R. 61-107.258.60 (h), (i) and (j)).</p> <p>5-33. MSWL unit operators must prepare a post-closure plan (R. 61-107.258.61(c), (d), and (e)).</p>	<p>(NOTE: Extensions beyond the 1-yr deadline for beginning closure may be granted by the Department.)</p> <p>Verify that the MSWL unit operator completes closure activities for each unit in accordance with the closure plan within 180 days of the beginning of closure, unless an extension is granted by the Department.</p> <p>Verify that the operator notifies the Department when a certification signed by an independent registered professional engineer verifying closure is completed has been placed in the operating record.</p> <p>Verify that the operator records a notation on the landfill facility property deed or other instrument normally examined during a title search and notifies the Department the notation has been recorded and a copy placed in the operating record.</p> <p>(NOTE: The landfill owner or operator may request permission from the Department to remove the notation from the deed if all facility wastes are removed.)</p> <p>Verify that the facility has a postclosure plan.</p> <p>Verify that the unit operator notifies the Department that a postclosure plan has been prepared and placed in the operating record no later than 9 October 1993 or before permit issuance, whichever is later.</p> <p>Verify that, after the postclosure care period is completed for each MSWL unit, the operator places in the operating record a certification that the conditions of the post-closure plan were met and notifies the Department of this certification.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>CONSTRUCTION, DEMOLITION, AND LAND-CLEARING DEBRIS LANDFILLS - PERMITS</p> <p>5-34. A construction, demolition, and land-clearing debris landfill must have a permit (R. 61-107.11(D)(1), (H)(1), (C)(5), (C)(9) and (C)(10), (A)(3), and (J)).</p>	<p>Verify that a permit is obtained from the Department before construction, operation, expansion, or modification of a construction, demolition, and land-clearing debris landfill.</p> <p>Verify that all permit conditions and Departmental requirements are met.</p> <p>(NOTE: Landfills for the disposal only of trees, stumps, wood chips, and yard waste when generation and disposal of such waste occurs on properties under the same control are exempt from construction, demolition, and land-clearing debris requirements. Landfills used solely for disposal of industrial solid waste generated in the course of normal operations on property under the same ownership or control as the solid waste landfill are also exempt.)</p> <p>(NOTE: A separate permit is required for each construction, demolition, and land-clearing debris landfill even though there may be one or more different types of facilities located on the same site.)</p>
<p>CONSTRUCTION, DEMOLITION, AND LAND-CLEARING DEBRIS LANDFILLS - EXISTING</p> <p>5-35. Existing construction, demolition, and land-clearing debris landfills must meet specific requirements (R. 61-107.11 (C)(2), (C)(3), (C)(4), (C)(11) and (C)(12)).</p>	<p>Verify that landfills with permits issued before 27 May 1991 meet the requirements for construction, demolition, and land-clearing debris landfills.</p> <p>Verify that existing construction, demolition, and land-clearing debris landfills permitted after 27 May 1991 submit as-built plans and specifications to the Department within 6 mo of 23 July 1993.</p> <p>Verify that existing construction, demolition, and land-clearing debris landfills permitted after 27 May 1991 will meet the construction, demolition, and land-clearing debris requirements within 12 mo of 23 July 1993.</p> <p>Verify that no open dumping of construction, demolition, and/or land-clearing debris occurs.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>CONSTRUCTION, DEMOLITION, AND LAND-CLEARING DEBRIS LANDFILLS - DESIGN AND OPERATION</p> <p>5-36. Construction, demolition, and land-clearing debris landfills must meet design requirements (R. 61-107.11(E)(1)).</p>	<p>Verify that landfills located in a 100-yr floodplain demonstrate that the landfill will not restrict the flow of the 100-yr flood.</p> <p>Verify that existing construction, demolition, and land-clearing debris landfills permitted after 27 May 1991 meet the construction, demolition, and land-clearing debris requirements within 12 mo of 23 July 1993.</p> <p>Verify that the landfill is not located within any wetlands as delineated and defined specifically as wetlands by the methodology accepted by USACE and the USEPA.</p> <p>Verify that access to the landfill is controlled through use of fences, gates, natural barriers, or other means to prevent promiscuous dumping and unauthorized access.</p> <p>Verify that the landfill's waste disposal boundary is not within the following distances of any of the following:</p> <ul style="list-style-type: none"> - 100 ft of any property line - 200 ft of any residence, school, daycare center, hospital, or recreational park - 200 ft of any surface water source or wetlands - 100 ft of any drinking water well. <p>Verify that the bottom elevation of the landfill trench is a minimum of 2 ft above the seasonal high water table as it exists before construction of the disposal area.</p> <p>Verify that construction, demolition, and land-clearing debris landfills are adjacent to, or have direct access to, roads of all-weather construction and capable of withstanding anticipated load limits.</p> <p>(NOTE: The Department may approve other design requirements.)</p>
<p>5-37. Construction, demolition, and land-clearing debris landfills must meet drainage-control requirements (R. 61-107.11(E)(2)).</p>	<p>Verify that the disposal site is graded with a minimum of 1 percent slope so all the following occur:</p> <ul style="list-style-type: none"> - runoff is minimized and diverted into the fill area of the landfill - erosion and ponding within the fill area are prevented - water is drained from the surface of the landfill. <p>(NOTE: A permit from the Department may be required to discharge stormwaters to surface waters.)</p>

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-38. Construction, demolition, and land-clearing debris landfills must have access to fire equipment and fire-fighting services (R. 61-107.11(E)(3)).</p> <p>5-39. Construction, demolition, and land-clearing landfills must meet insect and rodent control requirements (R. 61-107.11(E)(4)).</p> <p>5-40. Construction, demolition, and land-clearing debris landfills must meet specific requirements for waste acceptability (R. 61-107.11(F)).</p> <p>5-41. Construction, demolition, and land-clearing debris landfills must meet specific operations requirements (R. 61-107.11(G)(1) through (7) and (11)).</p>	<p>Verify that construction, demolition, and land-clearing debris landfills have access to fire equipment and fire-fighting services.</p> <p>Verify that procedures are established for maintaining conditions unfavorable for the habitation and production of insects and rodents.</p> <p>Verify that only wastes listed in Appendix 5-1 are accepted in construction, demolition, and land-clearing debris landfills.</p> <p>Verify that wastes listed in Appendix 5-2, and items or wastes listed in Appendix 5-1 which have been in direct contact with or may contain any hazardous constituents, are not accepted for disposal at construction, demolition, and land-clearing debris landfills.</p> <p>Verify that construction, demolition, and land-clearing debris landfills only accept waste allowed in Appendix 5-1 and in the landfill permit, unless specifically approved by the Department.</p> <p>Verify that unauthorized prohibited wastes received at the landfill are taken to an approved facility within 48 h, unless specifically approved by the Department.</p> <p>Verify that the unloading of solid waste intended for disposal in the landfill is restricted to the landfill's working face.</p> <p>Verify that the landfill's working face is confined to as small an area as the equipment can safely and efficiently operate in, with the slope not exceeding 33 percent.</p> <p>Verify that solid waste is spread in uniform layers and compacted to its smallest practical volume.</p> <p>Verify that a uniform compacted layer of earth cover or other suitable cover material acceptable to the Department that is at least 6 in. deep is placed over all exposed waste material at least monthly, unless otherwise approved by the Department.</p> <p>(NOTE: The Department may require more frequent cover.)</p>

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D (RCRA-D) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
5-41. (continued)	<p>Verify that no open burning is done at construction, demolition, and land-clearing debris landfills.</p> <p>Verify that a landfill attendant is on duty at all times the facility is open.</p>
5-42. Construction, demolition, and land-clearing debris landfills must prevent nuisances and hazards (R. 61-107.11 (G) (10)).	<p>Verify that all dust, odors, fire hazards, litter, and vectors are effectively controlled so they do not constitute nuisances or hazards.</p>
5-43. Construction, demolition, and land-clearing debris landfills must meet specific signage requirements (R. 61-107.11 (G) (12)).	<p>Verify that signs which meet all the following conditions are posted and maintained in conspicuous places:</p> <ul style="list-style-type: none"> - identify the operator or a contact person and telephone number in case of emergencies - note the hours the landfill is open for use - state the types of solid waste the landfill is permitted to receive.
5-44. Construction, demolition, and land-clearing debris landfills must meet specific reporting requirements (R. 61-107.11(H)).	<p>Verify that the Department is notified immediately by telephone upon implementation of the contingency plan, followed by a written confirmation.</p> <p>Verify that construction, demolition, and land-clearing debris landfills maintain daily records of all the following:</p> <ul style="list-style-type: none"> - type and actual or estimated weight of solid waste received - particular grid location of the area currently being used for disposal of solid waste. <p>Verify that construction, demolition, and land-clearing debris landfills submit to the Department by 15 October a fiscal annual report for the period of 1 July through 30 June of each year.</p> <p>Verify that the fiscal annual report information is maintained by the operator for at least 5 yr.</p> <p>Verify that 6 mo before the Department review of the facility's permit, the construction, demolition, and land-clearing debris facility submits a topographic survey map of the site to the Department that shows the contours at the beginning and the end of the period since the last permit review.</p>

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>ASBESTOS DISPOSAL</p> <p>5-45. Construction, demolition, and land-clearing debris landfills must meet specific requirements for asbestos (R. 61-107.11 (G)(13)).</p> <p>MUNICIPAL SOLID WASTE - COLLECTION, TEMPORARY STORAGE, AND TRANSPORTATION</p> <p>5-46. Collection, temporary storage, and transportation of municipal solid waste must meet specific requirements (R.61-107.5 (C)(1) and (A)(1) and (2)).</p> <p>5-47. Solid waste mixed with putrescible waste must be treated as putrescible waste (R. 61-107.5(C)(3)).</p> <p>5-48. Collection of putrescible municipal solid waste must meet specific requirements (R. 61-107.5 (D)(1)).</p>	<p>Verify that, before accepting any asbestos-containing materials for disposal at the landfill, the operator requires the asbestos-waste generator to submit for landfill records a copy of the permission for disposal letter from the Department's Bureau of Air Quality Control.</p> <p>Verify that the permission for disposal letters are retained for at least 5 yr and are made available to the Department upon request.</p> <p>Verify that the collection, temporary storage, and transportation of municipal solid waste is conducted in a manner meeting all of the following conditions:</p> <ul style="list-style-type: none"> - inhibits the harborage of flies, rodents, and other vectors - prevents conditions for disease transmission to man or animals - prevents blowing debris and particulates so human health and the environment are not injured - prevents water pollution and prevents the escape of solid waste or leachate to waters of the state - minimizes objectionable odors, dust, unsightliness, and aesthetically objectionable conditions - prevents the accumulation of materials in a tidy and unsafe manner that might present a fire hazard. <p>Verify that, when putrescible waste is mingled with other solid waste, the entire load of solid waste is considered putrescible waste.</p> <p>Verify that organized collection, such as drop-off centers and curbside collection, of putrescible solid waste is at a frequency which prevents hazards and nuisances to health and the environment.</p> <p>Verify that curbside collection of putrescible waste from residences is not less than 1 day per week.</p>

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D (RCRA-D) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
5-48. (continued)	<p>Verify that collection from solid waste storage containers from residences and food service facilities is not less than 2 days a week, unless the Department grants an extension.</p> <p>(NOTE: The Department may require more frequent collection.)</p>
5-49. Collection of non-putrescible municipal waste must meet specific requirements (R. 61-107.5 (D)(2)).	<p>Verify that organized collection of nonputrescible municipal solid waste is at a frequency which prevents hazards and nuisances to health and the environment.</p> <p>Verify that organized collection of nonputrescible municipal solid waste is not less than 1 day a week, unless the Department grants an extension.</p> <p>(NOTE: The weekly collection requirement does not apply to construction and demolition debris.)</p>
5-50. Municipal solid waste collectors must meet specific requirements (R. 61-107.5 (D) (3)).	<p>Verify that collectors of municipal solid waste ultimately dispose of solid waste at facilities and/or sites permitted or registered by the Department for processing or disposal of that waste stream.</p>
MUNICIPAL SOLID WASTE - STORAGE CONTAINERS	
5-51. Municipal solid waste storage containers must meet specific requirements (R. 61-107.5 (E)).	<p>Verify that municipal solid waste storage containers are properly maintained to inhibit the harborage of vectors and to minimize objectionable odors.</p> <p>Verify that municipal solid waste storage containers are constructed so they are readily cleanable, with proper drainage to prevent pooling of water.</p> <p>Verify that residents, businesses, and industries maintain areas around municipal solid waste storage containers so health and environmental hazards are prevented.</p> <p>Verify that collectors clean up refuse spilled during collection.</p> <p>Verify that municipal solid waste storage containers are not closer than 50 ft horizontal distance from the normal high water mark of any waters of the state, unless special provision is made that prevents wastes or waste drainage from entering waters of the state.</p> <p>Verify that, whenever possible, municipal solid waste storage containers are not located in a 100-yr floodplain, unless they demonstrate they will not restrict the flow of a 100-yr flood.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-51. (continued)</p> <p>MUNICIPAL SOLID WASTE - COLLECTION AND TRANSPORTATION VEHICLES</p> <p>5-52. Municipal solid waste collection and transportation vehicles must meet specific requirements (R. 61-107.5 (F)).</p> <p>TRANSFER STATIONS</p> <p>5-53. A solid waste transfer station must have a permit (R. 61-107.7(A)(2) and (3), (D)(1), (I), and (C)(6)).</p>	<p>Verify that municipal solid waste storage containers are not located within 100 ft of a groundwater well.</p> <p>Verify that all vehicles used to collect and/or transport municipal solid waste are constructed and maintained to prevent dropping, sifting, blowing, or other escapement of solid waste from the vehicle.</p> <p>Verify that precautions are taken to prevent spillage or leakage during transport from all vehicles used to collect and/or transport municipal solid wastes that produce leachate.</p> <p>Verify that all vehicles used to collect and/or transport putrescible solid wastes are emptied on a daily basis, unless exempted by the Department.</p> <p>Verify that collection and transportation vehicles or other devices used in transporting putrescible solid waste are cleaned and maintained as often as necessary to prevent odors, insects, rodents, or other nuisance conditions.</p> <p>Verify that approval from the Department or the appropriate sewer system is obtained before disposal of waste water from the routine cleaning of municipal solid waste collection and transportation vehicle areas coming into contact with solid waste.</p> <p>(NOTE: Vehicles used only for collection of inert waste, yard trash, and land-clearing debris are exempt from the disposal of waste water requirement.)</p> <p>(NOTE: All transfer stations must meet these transfer station requirements within 12 mo of 28 May 1993).</p> <p>Verify that a permit is obtained from the Department before construction, operation, expansion, or modification of a solid waste transfer station.</p> <p>Verify that all permit conditions and additional Departmental requirements are met.</p>

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D (RCRA-D) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
5-53. (continued)	(NOTE: Solid waste management facilities commonly referred to as drop-off centers or convenience centers, designed for the receipt of solid waste from personal, non-commercial vehicles and destined for delivery to another solid waste management facility, such as recycling, processing, treatment, or ultimate disposal, are not transfer stations and do not have to meet these solid waste transfer requirements. Also exempt are facilities that handle only recovered materials and facilities transferring solid waste generated in the course of normal operations on property under the same ownership or control as the waste transfer facility.)
5-54. Any spillage or leakage of solid waste at a transfer station must meet specific requirements (R. 61-107(C)(2)).	Verify that any spillage or leakage of solid waste at a transfer station is contained on the storage site, and no unpermitted discharges to the environment are made.
5-55. Sludges must not be accepted at transfer stations (R. 61-107.7(C)(3)).	Verify that sludges are not accepted at the transfer station and are transported directly to the disposal facility, disposal site, or processing operation.
5-56. Transfer stations must not handle hazardous wastes (R. 61-107.7(C)(4)).	Verify that transfer station operator does not cause, suffer, allow, or permit the handling of regulated hazardous waste or regulated infectious waste at the transfer station.
5-57. Solid waste transfer stations must meet specific design requirements (R. 61-107.7(E)(1) through (8), (10), and (11)).	<p>Verify that the active waste handling area is not located within the following distances of the following:</p> <ul style="list-style-type: none"> - 100 ft of any property line - 200 ft of any surface water, excluding drainage ditches and sedimentation ponds - 200 ft of any residence, school, hospital, or recreational park area - 100 ft of a drinking water well. <p>Verify that the active waste handling area is not located within any wetlands as delineated and defined specifically as wetlands according to the methodology accepted by the USACE and the USEPA.</p> <p>Verify that onsite roads and unloading areas are adequate in size and design to facilitate efficient unloading and loading of the collection and transportation vehicles and the unobstructed movement of vehicles.</p>

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D (RCRA-D) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
5-57. (continued)	<p>Verify that the unloading, storage, and loading surface areas meet the following conditions:</p> <ul style="list-style-type: none"> - are constructed of low permeability materials, such as asphalt or concrete - provided with a water supply for cleaning purposes - equipped with drains or pumps or equivalent means to facilitate the removal of water for proper disposal. <p>Verify that tipping areas are located within an enclosed building or covered area and all waste is contained in the tipping area.</p> <p>Verify that exhaust removal systems are installed in enclosed areas and operated to provide adequate ventilation.</p>
5-58. Solid waste transfer stations must meet specific access requirements (R. 61-107.7(E)(12) and (13)).	<p>Verify that access to the site is controlled through the use of fences, gates, berms, natural barriers, or other means approved by the Department.</p> <p>Verify that at least one sign is posted at each access point to the facility with the hours of operation and the types of solid waste accepted at the transfer station.</p>
5-59. Solid waste transfer stations must meet specific requirements for fire fighting (R. 61-107.7 (E)(15)).	<p>Verify that arrangements are made with a local fire department to provide fire-fighting services or that fire-fighting equipment is maintained onsite.</p>
5-60. Solid waste transfer stations must meet specific operation requirements (R. 61-107.7 (F)(2) through (7)).	<p>Verify that the transfer station maintains a neat and orderly appearance.</p> <p>Verify that the facility and the transportation vehicle interiors where waste is held are cleaned as often as necessary to control litter, odors, rats, insects, and other vectors.</p> <p>Verify that floors are free from standing water and that all drainage areas are discharged to a sanitary sewer or other management method acceptable to the Department.</p> <p>Verify that transfer stations with permanent operating mechanical equipment have an attendant on duty at all times the facility is open.</p> <p>Verify that solid wastes identified as nonputrescible recyclables or oversized, bulky, or untreatable solid waste are temporarily stored outside on the premises for not more than 1 week, unless an exemption is granted by the Department and the storage does not create a nuisance, sanitary, or environmental problem.</p> <p>Verify that adequate fire protection equipment is available at all times or arrangements are made with a local fire department.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
5-60. (continued)	<p>Verify that all putrescible wastes are removed for proper disposal within 24 h of receipt, unless an exemption is approved by the Department.</p> <p>Verify that all solid wastes not transferred within 24 h are stored in a manner promoting vector and odor control.</p>
5-61. Solid waste transfer stations must meet specific requirements for monitoring (R. 61-107.7(G)(1)).	<p>Verify that any groundwater, surface water, or air quality monitoring required by the Department is done.</p>
5-62. Solid waste transfer stations must meet specific recordkeeping requirements (R. 61-107.7(G)(2)).	<p>Verify that transfer stations maintain records of the amount of all solid waste accepted at the facility each day and where all wastes are disposed.</p> <p>(NOTE: Recordkeeping information may be maintained in a summary format.)</p> <p>Verify that these records are maintained for no less than 5 yr and are available to the Department upon request.</p>
5-63. Solid waste transfer stations must meet specific closure and postclosure requirements (R. 61-107.7(H)(1), (2), (3) and (5)).	<p>Verify that at least 60 days before closure, the operator provides the Department with a written notice of intent to close and a proposed closure date.</p> <p>Verify that, upon closing, the operator immediately posts signs at the facility which state the facility is no longer in operation and removes all waste from the facility.</p> <p>Verify that, within 30 days of closure, the operator either removes or treats all waste residues, contaminated soils, and equipment in accordance with the approved closure plan and notifies the Department upon completion.</p> <p>Verify that, if the operator cannot demonstrate that all contaminated soils can be practicably removed or treated, a postclosure care plan is submitted to the Department for approval.</p>
WASTE TIRES	
5-64. Waste tire collection sites, processing facilities, and disposal sites must have permits (R. 61-107.3(E)(1)), (C)(2), (D)(4), and (5)).	<p>Verify that any installation operating a waste tire collection site, processing facility, or disposal site has a permit.</p> <p>Verify that no construction of proposed facilities or equipment begins until all required permits are final.</p> <p>Verify that the permit conditions are met.</p>

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D (RCRA-D) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
5-64. (continued)	<p>(NOTE: Waste tire requirements do not apply to permitted solid waste management facilities with less than 2500 waste tires temporarily stored on the premises. Facilities must be maintained so mosquitoes and other public nuisances are prevented and controlled.)</p>
5-65. Disposal of waste tires or processed tires must meet specific requirements (R. 61-107.3(E)(3), (4), (5) and (6)); (C)(3).	<p>Verify that waste tires or processed tires are not disposed of, except at a permitted solid waste management facility.</p> <p>Verify that all tires to be landfilled or stored on site for more than 30 days are cut into eighths, unless the Department has given an exemption.</p> <p>Verify that 6 mo after 23 April 1993, whole tires are not disposed of in a landfill.</p> <p>Verify that waste tires are not stored unless the waste tires are collected and stored at a permitted waste tire collection center, or collected and stored before processing and recycling or disposal in a permitted solid waste management facility.</p> <p>Verify that any contracting for the transportation, disposal, or processing of waste tires is only done with a permitted waste tire collector.</p>
WASTE TIRES - HAULERS	
5-66. Waste tire haulers must meet specific requirements (R. 61-107.3(F)(3), (5) and (6); (E)(2)).	<p>Verify that a waste tire hauler is registered with the Department and renews the registration annually by 1 March.</p> <p>Verify that a waste tire hauler records and maintains for 3 yr the following information:</p> <ul style="list-style-type: none"> - approximate quantity of waste tires or processed tires hauled - where and from whom the waste tires or processed tires were hauled - where the waste tires or processed tires were deposited, including receipts or other written materials documenting where those tires were stored or disposed. <p>Verify that waste tire haulers submit to the Department an annual report by 1 March.</p> <p>Verify that waste tires are transported under conditions and circumstances that control mosquitoes and prevent their spread.</p> <p>Verify that waste tire haulers deposit waste tires and processed tires for storage and disposal only in one of the following:</p> <ul style="list-style-type: none"> - permitted waste tire processing or collection facility - permitted solid waste management facility - another Department-approved site.

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>WASTE TIRES - DISPOSAL FACILITIES</p> <p>5-67. Waste tire disposal facilities must meet specific site requirements for land disposal of cut or chopped tires (R. 61-107.3(I)(2)(a)).</p> <p>5-68. Waste tire disposal facilities must meet specific requirements for operational features and appurtenances when doing land disposal of cut or chopped tires (R. 61-107.3(I)(2)(c)).</p> <p>5-69. Waste tire disposal facilities must meet specific requirements for staff and equipment when doing land disposal of cut or chopped tires (R. 61-107.3(I)(2)(d)).</p> <p>5-70. Waste tire disposal facilities must meet specific requirements for operations when doing land disposal of cut or chopped tires (R. 61-107.3(I)(2)(e)).</p>	<p>Verify that, when land disposal of cut or chopped tires is used, the disposal location site meets all the following conditions:</p> <ul style="list-style-type: none"> - easily accessible to collection vehicles - has an adequate quantity of acceptable earth or other approved cover material - meets local zoning restrictions. <p>Verify that the disposal site is provided with operational features and appurtenances necessary to maintain a clean and orderly operation, including all the following:</p> <ul style="list-style-type: none"> - operational plans to direct and control use of the site - fencing of the site to control access, as necessary - an all-weather access road to the site. <p>Verify that all the following staff and equipment are provided to man and operate the site:</p> <ul style="list-style-type: none"> - equipment or adequate contractual arrangements for equipment sufficient for excavating, earth moving, spreading and covering operations - shelter for maintenance and storage of parts, equipment and tools - reserve equipment available within 24 h following equipment breakdown. <p>Verify that solid waste is disposed of in a manner in which materials are confined and will not have a detrimental effect on the environment.</p> <p>Verify that surface water is diverted from the tire disposal area.</p> <p>Verify that, within 1 mo after final termination of disposal operations at the site, or a major part of the site, the area is covered with at least 2 ft of compacted earth material adequately sloped to allow surface water runoff.</p> <p>Verify that all tires are covered at least every 30 days with at least 6 in. of well-compacted soil.</p> <p>Verify that the disposal site's finished surface is seeded with native grasses or other suitable ground cover immediately upon completion of that disposal site portion.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
5-70. (continued)	<p>Verify that, if applicable, the tires are spread and compacted in thin layers, and each layer of tires is compacted when it reaches 2 ft in depth.</p> <p>Verify that each cell is no more than 8 to 10 ft deep.</p> <p>Verify that conditions unfavorable for the habitation and production of insects and rodents are maintained at all times.</p> <p>Verify that the operator prevents and controls mosquitoes and rodents so the public health and welfare are protected and to prevent public nuisances on or from the facility.</p> <p>Verify that records of all mosquito, rodent, or pest control activities are kept and made available to the Department upon request.</p> <p>Verify that the operator implements control and prevention measures for rodents, mosquitoes, or other pests as may be required by the Department, local health department, or mosquito control program.</p> <p>Verify that access to the site is controlled so unauthorized persons are not admitted.</p> <p>Verify that site access is limited to those times when attendants are on duty or only to those authorized to use the site for tire disposal.</p> <p>Verify that the base grade elevation of the actual disposal area is 2 ft above the seasonal high water table as it existed before disposal area construction.</p>
5-71. Waste tire disposal facilities must meet specific requirements when using methods of tire disposal other than land disposal (R. 61-107.3(I)(3)).	<p>Verify that waste tire disposal facilities choosing another method of tire disposal than land disposal are at sites accessible to collection vehicles and that meet local zoning restrictions.</p>
5-72. Waste tire disposal facilities must meet specific recordkeeping requirements (R. 61-107.3(I)(5)).	<p>Verify that the waste tire disposal facility operator records and maintains for 3 yr facility activity information, including the following information about waste tires and processed tires received at the facility:</p> <ul style="list-style-type: none"> - the name and waste tire hauler registration number of the hauler who delivered the waste or processed tires to the facility - the quantity of waste or processed tires received from each hauler. <p>Verify that all records are available at the site for Department inspection during normal business hours.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-73. Waste tire disposal facilities must submit an annual report to the Department (R. 61-107.3 (I)(6)).</p> <p>5-74. Permitted and waste tire sites must meet specific requirements for closure procedures (R. 61-107.3(J)(2)).</p> <p>5-75. Nonpermitted existing tire disposal sites must meet specific requirements (R. 61-107.3 (K)(2)).</p>	<p>Verify that waste tire disposal facility operators submit an annual report to the Department by 1 March.</p> <p>Determine if the waste tire site is permitted or exempt from permitting.</p> <p>Verify that operators of permitted and waste tire sites provide written notice of intent to close and a proposed closure date to the Department at least 60 days before closure.</p> <p>Verify that closure signs are posted at the facility upon its closing.</p> <p>Verify that the complete removal of waste tires and cleaning of the waste handling areas is done within 10 days of closure.</p> <p>Verify that a Department inspection and approval of closure are requested within 10 days of closure.</p> <p>Verify that land is graded to promote positive drainage and seeded with native vegetation to prevent erosion within 60 days of closure.</p> <p>Verify that any existing waste tire site which does not meet the requirements for permitted waste tire management closes within 6 mo of 23 April 1993 or applies to upgrade the facility.</p> <p>Verify that a closure plan has been approved by the Department before closure activities begin.</p> <p>Verify that the operator, in closing the site, does all the following:</p> <ul style="list-style-type: none"> - stops public access - posts a notice indicating the site is closed and the nearest site where waste tires can be deposited - notifies the Department and county government of the closing - removes all waste tires, processed tires, and residuals to a waste tire processing facility, solid waste management facility authorized to accept waste or processed tires, or a legitimate user of processed tires - removes any solid waste to a permitted solid waste management facility - notifies the Department when closure is complete.

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>YARD WASTE, LAND-CLEARING DEBRIS, AND COMPOST</p> <p>5-76. Composting and/or wood-chipping facilities must register with the Department (R. 61-107.4 (C)(2) and (3)).</p> <p>5-77. Stockpiled chipped/shredded woodwaste must meet specific requirements (R. 61-107.4 (C)(3)(c)).</p> <p>5-78. Yard trash and land-clearing debris must not be disposed of in a MSWL or a resource recovery facility (R. 61-107.4(C)(1) and (5)).</p>	<p>Determine if the facility is engaged in one of the following exempt activities:</p> <ul style="list-style-type: none"> - backyard composting in which the compost is produced from materials grown onsite - farming operations in which the compost is produced from materials grown on the owner's land - mobile chipping/shredding equipment that chips/shreds wood waste and may spread the wood waste on rights-of-way after it has been chipped or shredded - temporary chipping/shredding and storage of wood waste for distribution to the public, as approved by the Department - shredding or chipping of untreated wooden pallets or other wooden packaging used by industry in its own operations that have not had direct contact with hazardous constituents, such as petroleum products. <p>Verify that the exempt activities do not create a public nuisance or any condition adversely affecting the environment or public health.</p> <p>Verify that composting facilities using yard trash and land-clearing debris and/or wood-chipping facilities which chip untreated woodwaste register with the Department before construction, operation, expansion, or modification.</p> <p>Verify that the Department is notified within 10 working days of the establishment of stockpiles of chipped/shredded woodwaste or storm debris.</p> <p>(NOTE: Inactive stockpiles of chipped/shredded woodwaste or storm debris are exempt from the requirements for yard trash, land-clearing debris, and compost.)</p> <p>Verify that chipped/shredded woodwaste or storm debris, temporarily stockpiled in lieu of spreading after 23 April 1993 is removed within 90 days in order to be exempt from these yard trash, land-clearing debris, and compost requirements.</p> <p>Verify that yard trash and land-clearing debris are not disposed of in a MSWL or a resource recovery facility, unless the landfill provides and maintains a separate yard trash and land-clearing debris composting area, and the yard trash and land-clearing debris have been separated from other municipal solid waste.</p> <p>Verify that compost is not used in any manner to endanger the public health and welfare and the environment.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-79. Composting and wood-chipping facilities must meet specific design requirements (R. 61-107.4 (E)).</p>	<p>Verify that facilities located over closed-out landfills have sufficient structural support for the operation, including total waste received, material processed, compost stored, equipment, and structures built onsite.</p> <p>Verify that the facility design follows acceptable management practices for composting methods that result in the aerobic, thermophilic decomposition of the solid organic constituents of solid waste to produce a stable, hygienically safe, humus-like material.</p> <p>Verify that the facility site meets the following conditions:</p> <ul style="list-style-type: none"> -if in flood plain, does not restrict the flow of a 100-yr flood -is maintained and operated to protect the established water quality standards of the surface waters and groundwaters -has a 50-ft or greater buffer between all property lines and compost pad or storage area -has 200-ft or greater buffer between compost pad or storage area and residences or dwellings -has a 200-ft or greater buffer between streams and rivers and compost pad or storage area -has a 100-ft or greater buffer between all drinking water wells and the active composting area -bottom elevation of the compost pad and storage areas is a minimum of 2 ft above seasonal high water table as it exists before disposal area construction -site access is controlled through use of fences, gates, berms, natural barriers, or other means -is not located within any wetlands as delineated and defined specifically as wetlands according to the methodology accepted by the USACE and USEPA -has access to fire equipment and fire-fighting services. <p>(NOTE: Alternative buffers for a covered facility may be approved by the Department.)</p>
<p>5-80. Composting and/or wood-chipping facilities must meet specific operation requirements (R. 61-107.4(F)(1) through (6)).</p>	<p>Determine if the facility composts yard trash and land-clearing debris and/or chips untreated wood waste.</p> <p>Verify that the facility is operated so vectors are controlled.</p> <p>Verify that only yard trash and land-clearing debris are accepted at the facility.</p> <p>Verify that odors and dust are controlled and minimized.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
5-80. (continued)	<p>Verify that, if solid waste other than yard trash or land-clearing debris is left at the facility, it is separated and stored so vector problems are prevented and it is properly disposed of within 7 days of its receipt.</p>
<p>5-81. Composting and/or wood-chipping facilities must meet specific requirements for drainage control (R. 61-107.4(7) and (8)).</p>	<p>Verify that waste with a low carbon to nitrogen ratio, such as grass clippings, is incorporated into piles within 48 h of onsite arrival.</p> <p>Verify that stormwater is diverted from the operational area.</p> <p>Verify that windrows are constructed parallel to topographical slopes.</p> <p>Verify that the site is graded to prevent ponding of water in the active composting areas.</p> <p>(NOTE: A National Pollutant Discharge Elimination System permit may be required before stormwaters can be discharged to surface waters.)</p>
<p>5-82. Composting and/or wood-chipping facilities must meet specific requirements for access and security (R. 61-107.4 (F)(9)).</p>	<p>Verify that the site is secured by means of gates, chains, berms, fences, or other security measures to prevent unauthorized entry.</p> <p>Verify that an all-weather road to the site is maintained in good condition.</p>
<p>5-83. Composting and/or wood-chipping facilities must meet specific signage requirements (R. 61-107.4(F)(10)).</p>	<p>Verify that signs are posted in conspicuous places to identify the operator or contact person, and his or her telephone number in case of emergency, and the hours when the site is open for use.</p> <p>Verify that traffic signs or markers are provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient operating conditions.</p> <p>Verify that signs are posted stating that only yard trash and land-clearing debris can be accepted at the site, unless the site is also permitted by the Department for solid waste disposal.</p>
<p>5-84. Composting and/or wood-chipping facilities must meet specific safety requirements (R. 61-107.4 (F)(11)).</p>	<p>Verify that no open burning of solid waste occurs at a composting facility.</p> <p>Verify that equipment is provided to control accidental fires and/or arrangements are made with the local fire protection agency to immediately provide fire-fighting services when needed.</p> <p>Verify that space is provided between piles to allow access for vehicles, including fire equipment.</p>

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-85. Composting and/or wood-chipping facilities must meet monitoring requirements (R. 61-107.4 (F)(12)(a)).</p> <p>5-86. Composting and/or wood-chipping facilities must submit an annual report (R. 61-107.4(F)(12) (b)).</p> <p>5-87. Composting and/or wood-chipping facilities must meet specific closure requirements (R. 61-107.4 (G)(2)).</p>	<p>Verify that any environmental monitoring required by the Department is done.</p> <p>Verify that an annual report is submitted by 15 October to the Department and the respective county or region where the facility is located.</p> <p>Verify that all composting and wood-chipping facilities provide written notice of intent to close and a proposed closure date to the Department at least 60 days before closure.</p> <p>Verify that, upon closing, closure signs are immediately posted at the facility.</p> <p>Verify that complete removal of compost material and cleaning of the waste-handling areas is done within 10 days of closure and that Department inspection and approval of closure is requested.</p> <p>Verify that, within 60 days of closure, land is graded to promote positive drainage and seeded with native grasses to prevent erosion.</p>
<p>WHITE GOODS - GENERAL</p> <p>5-88. Disposal of white goods must meet specific requirements (R. 61-107.9 (C)(1) and (2)).</p>	<p>Verify that on and after 27 May 1994, no person knowingly includes white goods with other municipal solid waste intended for collection or disposal at an MSWL.</p> <p>Verify that on and after 27 May 1994 no MSWL operator knowingly accepts white goods for disposal at the landfill.</p> <p>(NOTE: The MSWL operator may accept white goods for temporary storage before shipment to a recycling facility.)</p>

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-89. Specific requirements must be met before recycling or disposing of white goods (R. 61-107.9(C)(3)).</p>	<p>Verify that, before white goods are recycled or disposed of, all the following conditions are met:</p> <ul style="list-style-type: none"> - all ozone-depleting compounds, such as chlorofluorocarbons, used as refrigerants are recovered in accordance with applicable state and local requirements - all electrical components are removed and disposed in a manner consistent with state and local requirements.
<p>5-90. Storage of white goods must meet specific requirements (R. 61-107.9(C)(4)).</p>	<p>Verify that white goods are stored so human health and safety and the environment are protected, in accordance with state and local requirements.</p>
<p>LEAD ACID BATTERIES</p>	
<p>5-91. Collection, recycling, and recovered material processing facilities must register with the Department to accept lead acid batteries (R. 61-107.8 (D)(1)).</p>	<p>Verify that collection, recycling, and recovered material processing facilities register with the Department to accept lead acid batteries and renew registrations by 1 March of each calendar year.</p> <p>(NOTE: Persons selling lead acid batteries or offering lead acid batteries for retail sale or wholesale, and that accept lead acid batteries at the point of transfer only from customers, do not have to register.)</p>
<p>5-92. Disposal of lead acid batteries by persons must meet specific requirements (R. 61-107.8 (C)(1)).</p>	<p>Verify that no person knowingly places a used lead acid battery in mixed municipal solid waste or discards or disposes of a lead acid battery except by delivery to one of the following:</p> <ul style="list-style-type: none"> - a lead acid battery retailer or wholesaler - a collection, recycling, or recovered material processing facility registered by the Department to accept lead acid batteries - a permitted secondary lead smelter.
<p>5-93. Operation of a lead acid battery collection, recycling, or recovered material processing facility must meet specific requirements (R. 61-107.8 (C)(6)).</p>	<p>Verify that a lead acid battery collection, recycling, or recovered material processing facility is operated in a manner protecting public health, safety, and the environment.</p> <p>Verify that leaking lead acid batteries are stored in heavy duty plastic bags or other suitable containers capable of preventing discharge of acid.</p>

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>SOLID WASTE PROCESSING FACILITIES</p> <p>5-94. Existing solid waste processing facilities must meet specific requirements (R. 61-107.5(C)(2) and (3)).</p> <p>5-95. Solid waste processing facilities must have a permit (R. 61-107.5(C)(6) and (8), (D)(1), and (K)).</p> <p>5-96. Leachate and wash-water from a solid waste processing facility must not drain or discharge into waters of the state without a permit (R. 61-107.5 (F)(3)(e)).</p>	<p>Verify that all installations with existing solid waste processing facilities submit to the Department as-built plans of the existing facility within 6 mo of 28 May 1993.</p> <p>Verify that existing facilities receiving solid waste for processing meet the requirements within 12 mo of 28 May 1993.</p> <p>Verify that a permit from the Department is obtained before construction, modification or operation of a solid waste processing facility.</p> <p>Verify that there is a permit for each solid waste processing site or facility.</p> <p>Verify that all conditions of permits and Departmental orders are met.</p> <p>(NOTE: The Department may include one or more different types of facilities in a single permit if the facilities are collocated the same site.)</p> <p>Verify that the solid waste processing facility permittee notifies the Department before transferring ownership or operation of the facility during its operating life or the postclosure care period.</p> <p>Verify that a solid waste processing facility has an effluent disposal permit approved by the Department before draining or discharging leachate or washwater into waters of the state.</p> <p>Verify the records of any monitoring required by the Department are kept for 5 yr from the sample or measurement date, unless otherwise specified by the Department.</p>

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D (RCRA-D) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
SOLID WASTE INCINERATION 5-97. Municipal solid waste incineration facilities must have a permit for construction, modification, or operation (R. 61-107.12(A)(2), (C)(13), (D)(1), (L), and (K)).	<p>Verify that a permit is obtained from the Department before construction, modification, or operation of a municipal solid waste incineration facility.</p> <p>Verify that all permit conditions and Departmental orders and requirements are met.</p> <p>(NOTE: Facilities incinerating solid waste generated in the course of normal operations on property under the same ownership or control as the solid waste incineration facility are exempt from R. 61-1-7.12, <i>Solid Waste Management: Municipal Solid Waste Incineration and Municipal Solid Waste Pyrolysis Facilities</i>. Facilities are required to meet applicable South Carolina Air Pollution Control regulations. Facilities with a valid permit for managing hazardous or infectious waste may be exempted from some of these requirements.)</p>
INFECTIOUS WASTE - PERMITS 5-98. Installations must have a permit before constructing or expanding an infectious waste facility (R. 61-105(V)(1), (6), (8) and (9); (BB)(1)).	<p>Verify that an installation planning to construct or expand an infectious waste facility has a permit.</p> <p>Verify that any changes in the standard operating procedure manual required for a permit are submitted to the Department for approval.</p> <p>Verify that the standard operating procedure manual is adhered to.</p> <p>Verify that the Department is notified within 30 days of any changes in the information required for the permit or changes that would require permit modification.</p> <p>Verify that all permit conditions are met.</p> <p>(NOTE: The Department may grant a variance from state infectious waste requirements upon written petition.)</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-99. An intermediate handling facility must have a permit from the Department to manage infectious waste (R. 61-105(V)(6), (8), (9), and (15)).</p>	<p>Verify that intermediate handling facilities have a permit to manage infectious waste.</p> <p>Verify that any changes in the standard operating procedure manual required for a permit are submitted to the Department for approval.</p> <p>Verify that all permit conditions are met.</p> <p>Verify that the Department is notified within 30 days of any changes in the information required for the permit or changes that would require permit modification.</p>
<p>5-100. An infectious waste treatment or disposal facility or generator facility must have a permit (R. 61.105(U)(1) and (9)).</p> <p>INFECTIOUS WASTE - PERMIT-BY-RULE</p> <p>5-101. An infectious waste treatment facility must meet specific requirements in order to operate under a permit-by-rule (R. 61-105(W)(1), (2) and (3)).</p>	<p>Verify that any infectious waste treatment or disposal facility or generator facility has a permit.</p> <p>(NOTE: A separate permit is required for each site or facility, although the Department may include one or more different types of facilities in a single permit, if the facilities are located on the same site.)</p> <p>Verify that infectious waste treatment facilities with a permit-by-rule meet all the following conditions:</p> <ul style="list-style-type: none"> - meet all state infectious waste requirements - demonstrate that more than 75 percent of the total weight of all infectious waste stored, treated, or disposed of by the facility is generated onsite - assure that no facility activities involve the placing of infectious waste directly into the environment - notify the Department that the facility is operating under a permit-by-rule. <p>Verify that the Department is notified within 30 days of any changes in the information required for registration.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>INFECTIOUS WASTE - GENERATORS</p> <p>5-102. Generators must register with the Department (R. 61-105(F)(1), (2) and (3)).</p> <p>5-103. Generators must meet specific requirements for designated infection control committees (R. 61-105(F)(5)).</p> <p>5-104. Generators must meet specific requirements for infectious waste management (R. 61-105(F)(6)).</p> <p>5-105. Generators must receive Departmental authorization before shipping infectious waste offsite to a destination facility (R. 61-105(F)(7)).</p>	<p>Verify that all in-state generators of infectious waste register with the Department.</p> <p>Verify that the Department is notified within 30 days of any changes in the information required for registration.</p> <p>Verify that the generator has a designated infection control committee with the authority and responsibility for infectious waste management.</p> <p>Verify that the infection control committee develops or adopts a written protocol to manage the infectious waste stream from generation to disposal.</p> <p>Verify that the written protocol includes contingency plans and a quality assurance program to monitor their onsite treatment procedures.</p> <p>(NOTE: Small quantity generators are not required to have an infection control committee or a written protocol.)</p> <p>Verify that each generator segregates infectious waste from other waste at the point of generation.</p> <p>Verify that the generator meets the requirements for packaging, labeling, and storage of containers.</p> <p>Verify that generators treat microbiological cultures and etiological agents onsite. .</p> <p>Verify that any in-state or out-of-state generators receive Departmental authorization annually before shipping infectious waste offsite to a destination facility in South Carolina.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>INFECTIOUS WASTE - SMALL QUANTITY GENERATORS</p> <p>5-106. Small quantity generators must meet specific requirements for segregating infectious waste from other waste (R. 61-105(G)(1)(a)).</p> <p>5-107. Small quantity generators must meet specific requirements for packaging and labeling (R. 61-105(G)(1)(a)).</p> <p>5-108. Small quantity generators must meet specific requirements for offering infectious waste for offsite transport (R. 61-105(G)(1)(a)).</p> <p>5-109. Small quantity generators must meet specific requirements for the packaging of sharps (R. 61-105(G)(1)(b)(i)).</p> <p>5-110. Small quantity generators must meet the infectious waste treatment requirements when managing cultures, human blood, and blood products (R. 61-105(G)(1)(b)(ii) and (iii)).</p>	<p>(NOTE: Small quantity generators are in-state generators that produce less than 50 lb of infectious waste per calendar month. Small quantity generators are exempt from any other infectious waste requirements than these small quantity generator requirements.)</p> <p>Verify that small quantity generators segregate infectious waste from other waste at the point of generation.</p> <p>Verify that small quantity generators meet labeling and packaging requirements.</p> <p>Verify that small quantity generators offer infectious waste for offsite transport only to a transporter with a current Departmental registration.</p> <p>Verify that small quantity generators place sharps in rigid, puncture-resistant containers.</p> <p>(NOTE: Sharps placed in puncture-resistant containers may be disposed of as other solid waste. See the definition of infectious waste for a definition of sharps.)</p> <p>Verify that management of cultures, human blood, and blood products at small quantity generators meets the infectious waste treatment requirements for larger generators.</p> <p>(NOTE: All other infectious waste may be disposed of as other solid waste after being properly packaged to prevent exposure to solid waste workers and the public.)</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-111. Small quantity generators transporting their own infectious waste must meet specific requirements (R. 61-105(G)(2)).</p> <p>5-112. Infectious waste offered by small quantity generators for transport offsite for treatment at a destination facility must meet specific requirements (R. 61-105(G)(3)).</p>	<p>Determine if the small quantity generator transports its own infectious waste.</p> <p>Verify that no more than 50 lb of infectious waste is transported at one time.</p> <p>Verify that infectious waste is not transported in the passenger compartment of the vehicle.</p> <p>Verify that infectious waste offered by a small quantity generator for transport offsite for treatment at a destination facility meets the requirements for segregation of infectious wastes and all of the generator requirements.</p>
<p>INFECTIOUS WASTE - MANAGEMENT</p> <p>5-113. Generators must segregate infectious waste from solid waste as close to the point of generation as practical (R. 61-105(H) and (E)(2)(c)).</p> <p>5-114. Materials or surfaces coming into contact with infectious waste must be disinfected before reuse (R. 61-105(L)(1) and (2)).</p>	<p>Verify that generators segregate infectious waste from solid waste as close to the point of generation as practical to avoid commingling of these wastes.</p> <p>Verify that, when infectious waste is put in the same container as other waste or when solid waste is put in a container labeled infectious waste, the entire contents are managed as infectious waste, unless hazardous and/or radioactive waste requirements apply.</p> <p>(NOTE: When hazardous and/or radioactive waste regulations apply to waste that includes infectious waste, the most stringent of the regulations is to be followed.)</p> <p>Verify that materials or surfaces which came into contact with infectious waste are disinfected before reuse.</p> <p>Verify that reusable containers which contained infectious waste are disinfected immediately after being emptied or are treated along with the waste.</p> <p>Verify that vehicle bodies used to store or transport infectious waste are disinfected immediately after unloading.</p>

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D (RCRA-D) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
5-114. (continued)	<p>Verify that surfaces on which there was spillage of infectious waste are disinfected immediately.</p> <p>Verify that disinfection is done through appropriate use of a Department-approved disinfectant.</p>
5-115. Drainage from decontamination processes must meet specific requirements (R. 61-105 (L)(3)).	<p>Verify that drainage from decontamination processes meets one of the following conditions:</p> <ul style="list-style-type: none"> - discharged to a Department-approved sanitary sewer system - transported to a Department-approved sewerage treatment facility or permitted infectious waste treatment facility.
5-116. Generators that transport, or offer for transport, infectious waste for offsite treatment, storage, or disposal must prepare a manifest (R. 61-105 (M)(1), (3), (4), and (5)).	<p>Determine if the generator transports, or offers for transport, infectious waste for off-site treatment, storage, or disposal.</p> <p>Verify that the generator prepares a manifest.</p> <p>Verify that the manifest form accompanies the waste at all times after leaving the generator's facility.</p> <p>Verify that the generator signs by hand all the following certifications on the manifest:</p> <ul style="list-style-type: none"> - certification that the waste packaging and labeling meets requirements and that the waste description is accurate - certification that the shipment does not contain regulated quantities of hazardous waste - certification that the shipment does not contain radioactive waste. <p>Verify that the generator keeps one copy of the manifest after the transporter has signed accepting the shipment.</p> <p>Verify that generators notify the Department in writing if they do not receive a completed manifest appropriately signed from the destination facility within 30 days after offering for transport.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>INFECTIOUS WASTE - PACKAGING</p> <p>5-117. Generators and small quantity generators must make sure that infectious waste is properly packaged before transporting it or offering it for transport offsite (R. 61-105(I)(1) and (2)).</p> <p>5-118. Infectious waste must be packaged in containers meeting specific requirements before and during transport (R. 61-105(I)(3) and (7)).</p> <p>5-119. Containers for infectious waste must meet specific requirements (R. 61-105(I)(4), (8) and (10)).</p> <p>5-120. Containers of infectious waste must be sealed (R. 61-105 (I)(5)).</p> <p>5-121. Plastic bags used inside of infectious waste containers must meet specific requirements (R. 61-105(I)(6)).</p>	<p>Verify that infectious waste packaging meets the packaging requirements before it is transported or offered for transportation offsite.</p> <p>Verify that generators place and maintain all sharps in rigid, leak-resistant, and puncture-resistant containers that are secured tightly to preclude loss of the contents and that are designed for the safe containment of sharps.</p> <p>Verify that all types of infectious waste, other than sharps, are placed, stored, and maintained before and during transport in a rigid or semi-rigid, leak-proof container that is impervious to moisture.</p> <p>(NOTE: Dumpsters, roll-off containers, truck bodies, or other vehicle containment areas do not constitute a rigid containment system.)</p> <p>Verify that infectious waste containers meet all the following conditions:</p> <ul style="list-style-type: none"> - have sufficient strength to prevent bursting and tearing during handling, storage, or transportation - are disposable or reusable containers appropriate for the type and quantity of waste - can be handled and handling, transfer, and transportation without impairing the integrity of the container - are closed tightly and securely - reusable containers are disinfected after each use - are compatible with selected storage and treatment processes. <p>Verify that containers with infectious waste are sealed to prevent any discharge of the contents at any time until the container enters the treatment system.</p> <p>Verify that plastic bags used inside of infectious waste containers are red or orange in color and have enough strength to prevent tearing.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-122. Generators must not compact infectious waste (R. 61-105(I)(11)).</p> <p>5-123. Generators must meet specific requirements for the packaging of exempt or excluded waste (R. 61-105(I)(12)).</p> <p>INFECTIOUS WASTE - LABELING</p> <p>5-124. Labeling of containers must meet specific requirements (R. 61-105(J)(1) and (2)).</p> <p>5-125. Bags used to line infectious waste containers must meet specific requirements for labeling (R. 61-105(J)(3)).</p> <p>5-126. Transporters must meet specific requirements for labeling (R. 61-105(J)(4) and (5)).</p>	<p>Verify that generators do not compact infectious waste by any means before the waste enters the containment of the treatment process.</p> <p>Verify that exempt or excluded waste is not packaged as infectious waste or, if the waste was once infectious, it has a label indicating that it is not infectious and an explanation of why it is not infectious.</p> <p>Containers of infectious waste offered for transport offsite are to be labeled on outside surfaces so all the following are readily visible:</p> <ul style="list-style-type: none"> - the universal biohazard symbol - name and Department-issued number of the in-state generator - name, address, and phone number of the generator, if the waste is generated outside the state - a labeling process that is water-resistant and indelible - the date the container was placed in storage - the words INFECTIOUS WASTE, BIOHAZARDOUS WASTE, or MEDICAL WASTE. <p>Verify that containers are labeled in English.</p> <p>Verify that each bag used to line the inside of an outer container is labeled with indelible ink in a water-resistant labeling process or imprinted with the universal biohazard symbol.</p> <p>Verify that transporters label each outer container at the time it is accepted.</p> <p>Verify that transporters affix required labels so no other required markings or labels are obscured.</p>

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-127. Abbreviations used in labeling on containers of infectious waste must meet specific requirements (R. 61-105(J) (6)).</p> <p>INFECTIOUS WASTE - STORAGE</p> <p>5-128. Storage of infectious waste must meet specific requirements (R. 61-105(K)(1), (2), (3), and (4)).</p> <p>5-129. Storage of infectious waste must meet specific refrigeration requirements (R. 61-105 (K) (5)).</p>	<p>Verify that abbreviations used in required labeling on infectious waste containers are common dictionary, standard abbreviations.</p> <p>Verify that storage of infectious waste is done in a way and at a location which protects the waste from animals, vectors, and weather conditions and minimizes the exposure to the public.</p> <p>Verify that infectious waste does not provide a food source or breeding place for insects or rodents.</p> <p>Verify that infectious waste is protected to maintain the integrity of the packaging.</p> <p>Verify that infectious waste is stored so releases or discharges of contents are prevented.</p> <p>Verify that outdoor storage areas for infectious waste, such as dumpsters or trailers, are locked.</p> <p>Verify that access to storage areas for infectious waste is limited to authorized personnel only.</p> <p>Verify that storage areas for infectious waste are labeled with the universal biohazard symbol sign and the words INFECTIOUS WASTE, MEDICAL WASTE, or BIOHAZARDOUS WASTE.</p> <p>Verify that infectious waste is maintained in a nonputrescent state, and refrigeration is used when necessary.</p> <p>Verify that onsite storage by the generator for quantities of 50 lb or less of waste do not exceed 14 days without refrigeration and 30 days if maintained at or below 42 °F.</p> <p>Verify that multi-practice offices meet the quantity limits cumulatively if using the same outside storage area.</p> <p>Verify that onsite storage by the generator for quantities of more than 50 lb does not exceed 96 h without refrigeration and 30 days if maintained at or below 42 °F.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-129. (continued)</p> <p>INFECTIOUS WASTE - TRANSPORTERS</p>	<p>Verify that once infectious waste leaves the generator site, the waste is not kept for more than 24 h at ambient temperature or 96 h below 42 °F before delivery to a permitted treatment facility.</p> <p>Verify that after infectious waste is stored in a refrigerated or frozen state by a generator, an intermediate handling facility operator, a transfer facility operator, or a transporter, the waste is maintained in a refrigerated or frozen state until treatment at a permitted treatment facility.</p> <p>Verify that treatment facilities store infectious waste below 42 °F and do not store waste for more than 48 h.</p>
<p>5-130. Infectious waste transporters or transfer facility operators in South Carolina must be registered with the Department (R. 61-105(N)(1) and (2); (O)(1)).</p>	<p>Verify that transporters of infectious wastes generated, stored, transferred, transported, treated, or disposed of in South Carolina have valid registration from the Department whenever transporting waste.</p> <p>(NOTE: There may be exemptions to the registration requirement. Generators who transport their own infectious waste offsite, except for small quantity generators, must meet all applicable transporter requirements.)</p> <p>Verify that transfer facility operators are registered with the Department.</p>
<p>5-131. Transporters of infectious waste must meet specific requirements for repacking defective boxes of infectious wastes (R. 61-105(N)(4)).</p>	<p>Verify that infectious waste transporters meet packaging and labeling requirements when repacking defective boxes of infectious wastes.</p>
<p>5-132. Transporters must meet specific requirements when transporting infectious waste (R. 61-105(N)(5)).</p>	<p>Verify that transporters meet all applicable infectious waste requirements when storing infectious waste.</p> <p>Verify that transporters meet storage requirements in the course of transport.</p> <p>Verify that transporters meet all infectious waste requirements when removing infectious waste from reusable containers.</p> <p>Verify that transporters meet all infectious waste requirements when repackaging or modifying packaging of infectious waste.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
5-133. Transporters must develop and follow an infectious waste management plan (R. 61-105 (N)(6)).	Verify that transporters develop and adhere to a written infectious waste management plan approved by the Department.
5-134. Transporters must meet specific requirements for discharges of infectious waste (R. 61-105(N)(8), (9) and (10)).	<p>Verify that transporters prevent discharges of infectious waste from a transport vehicle into the environment.</p> <p>Verify that, when an infectious waste discharge during transportation or storage occurs, the transporter takes appropriate and immediate action to prevent potential effects to human health or the environment, calls the Department's 24-h emergency number, 803-253-6488, and gives the information requested.</p>
5-135. Transport vehicles carrying infectious waste which are left unattended must meet specific requirements (R. 61-105 (N) (11)).	Verify that no transport vehicle containing infectious waste is left unattended for more than 1 h unless it is in a secured area not accessible to the general public.
5-136. Transporters must screen all boxes of infectious waste for radioactive material (R. 61-105(N) (12)).	<p>Verify that transporters screen all boxes of infectious waste for the presence of radioactive material before accepting the waste for transport.</p> <p>Verify that, when radioactive material is detected, the material is managed according to state and Federal agencies' requirements.</p>
5-137. Transporters must meet specific requirements when accepting infectious waste for transport (R. 61-105(P) (1)).	Verify that transporters accept for transport only infectious waste that meets all packaging and labeling requirements.
5-138. Transporters must attach a waterproof identification label to the outside of each container of infectious waste accepted for transport (R. 61-105 (P)(2)).	<p>Verify that transporters attach a waterproof identification label to the outside of each container of infectious waste they accept for transport.</p> <p>Verify that the label is affixed so it does not cover any other required labels or markings.</p>

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-139. Vehicles used to transport infectious waste must meet specific requirements (R. 61-105(Q)(1)(a) through (g)).</p>	<p>Verify that a vehicle used to transport infectious waste meets the following conditions:</p> <ul style="list-style-type: none"> - has a fully enclosed, leak-proof, cargo-carrying body that protects the waste from animals, vectors, and weather conditions - the containers of waste are loaded and unloaded so no compaction or mechanical stress of the waste occurs during handling or transit - the cargo-carrying body is maintained in a sanitary condition and disinfected immediately after each unloading and as spills are detected - the cargo-carrying body is designed to prevent discharges of infectious waste, especially fluids, into the environment - the cargo-carrying body is decontaminated of visible debris after each unloading - the cargo-carrying body is sealed with a tamper-resistant seal or otherwise secured if left unattended while carrying infectious waste - identification is permanently affixed to the cargo-carrying body on two sides and the back in letters a minimum of 3 in. in height that state the transporter's name and Department-issued registration number and the words INFECTIOUS WASTE, MEDICAL WASTE, or BIOHAZARDOUS WASTE.
<p>5-140. Transport vehicles used to transport, store, or manage infectious waste must only be used for waste transport (R. 61-105(Q)(1)(h)).</p>	<p>Verify that vehicles used to transport, store, or manage infectious waste are only used for infectious waste transport and not for any other purpose than storing materials used in conjunction with infectious waste transportation.</p>
<p>5-141. Transporters who transport or store infectious waste and other solid waste in the same cargo-carrying body must meet specific requirements (R. 61.105(Q)(2)).</p>	<p>Verify that transporters who transport or store infectious waste and other solid waste in the same cargo-carrying vehicle body manage both types of wastes as infectious waste.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-142. Transporters using transport vehicles to store infectious waste must meet specific requirements (R. 61.105(Q)(3)).</p>	<p>Verify that one of the following conditions is met when transport vehicles are used to store infectious waste:</p> <ul style="list-style-type: none"> - storage is in a location inside a building with limited access and is locked when unattended - storage is in a location outside that is secured by a barrier which limits access and is locked when unattended. <p>Verify that transport vehicles used to store infectious waste meet storage requirements.</p>
<p>5-143. Drainage from a transport vehicle's cargo-carrying body must meet specific requirements when the body carried infectious waste (R. 61.105 (Q)(4)).</p>	<p>Verify that all drainage from the transport vehicle's cargo-carrying body discharge directly or through a holding tank to a Department-approved sanitary sewer system or approved container for appropriate treatment.</p>
<p>5-144. Transporters must meet specific requirements before accepting infectious waste for transport (R. 61.105(R) (2)).</p>	<p>Verify that transporters do all the following before accepting infectious waste for transport:</p> <ul style="list-style-type: none"> - visually inspect the containers to assure proper packaging, if the waste is loaded by the transporter - certify that the manifest accurately reflects the number and total weight of the containers being transported by signing and dating the manifest - return a signed and dated copy of the manifest to the generator before leaving the site.
<p>5-145. The transporter, transfer facility operator, and/or intermediate handling facility operator must make sure that the manifest form accompanies the infectious waste (R. 61.105(R)(3)).</p>	<p>Verify that the transporter, transfer facility operator, and/or intermediate handling facility operator make sure that the manifest form accompanies the infectious waste at all times until the waste is unloaded for treatment.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-146. Transporters must deliver the entire quantity stated on the manifest accepted from the generator or another transporter (R. 61.105(R)(6) and (7)).</p>	<p>Verify that the transporter delivers the entire quantity stated on the manifest and accepted from the generator or another transporter to the next transporter or the destination facility listed on the manifest.</p> <p>Verify that, if the transporter cannot deliver the entire quantity stated on the manifest, the transporter takes all the following steps:</p> <ul style="list-style-type: none"> - contacts the generator for further instructions - revises the manifest in accordance with the generator's instructions - delivers the entire quantity of infectious waste for that generator according to the generator's instructions. <p>(NOTE: The generator's instructions must be within the law.)</p>
<p>5-147. Transporters must submit an infectious waste transporter annual report each year to the Department (R. 61.105(S)).</p> <p>INFECTIOUS WASTE - TREATMENT</p> <p>5-148. Infectious waste must be treated before being disposed of in sanitary landfills (R. 61.105(T)(1) and (5)).</p> <p>5-149. Infectious waste treatment must meet specific requirements (R. 61.105(T)(2), (4), (6), (9) and (10)).</p>	<p>Verify that transporters accepting waste to be stored, transferred, transported, treated, disposed of, or managed in South Carolina submit an infectious waste transporter annual report each calendar year to the Department by 15 March of the following year.</p> <p>Verify that infectious waste is treated before being disposed of in sanitary landfills.</p> <p>(NOTE: Small quantity generators may treat infectious waste onsite by an approved method without being permitted as a treatment facility. An approved liquid or semi-liquid infectious waste may, before treatment, be discharged directly into a Department-approved wastewater treatment disposal system. Recognizable human anatomical remains may be disposed of, before treatment, by interment or donated for medical research.)</p> <p>Verify that infectious waste treatment is by one of the following treatment methods and meets applicable state and Federal laws and regulations:</p> <ul style="list-style-type: none"> - incineration - steam sterilization - chemical disinfection - any Department-approved method. <p>Verify that, after adequate treatment, the waste residue is disposed of in accordance with state and Federal solid waste requirements.</p>

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D (RCRA-D) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
5-149. (continued)	<p>Verify that storage of infectious waste before treatment meets storage requirements.</p> <p>Verify that treatment of infectious waste is monitored by use of biological indicators or laboratory culture of the treatment residue to ensure that pathogens have been adequately treated.</p> <p>(NOTE: The frequency of monitoring may be determined by the Department.)</p> <p>Verify that microbiological cultures and stocks of etiological agents are treated on the generator's site and are not sent offsite for treatment.</p>
5-150. Permitted infectious waste treatment facilities must not knowingly accept untreated microbiological cultures and stocks of etiological agents (R. 61.105(T)(10)).	<p>Verify that permitted treatment facilities do not knowingly accept untreated microbiological cultures and stocks of etiological agents.</p>
5-151. Infectious waste or treated infectious waste must not be discharged to the environment (R. 61.105(T)(7)).	<p>Verify that no infectious waste or treated infectious waste is discharged into the environment.</p>
INFECTIOUS WASTE - TREATMENT FACILITIES	
5-152. Infectious waste disposal must meet specific requirements (R. 61.105(U)(3)).	<p>Verify that infectious waste is not disposed of until or unless Department-approved monitoring methods confirm effectiveness of the treatment process.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-153. Infectious waste treatment facility and intermediate handling facility personnel must meet specific requirements when an accidental spill of infectious waste occurs (R. 61.105(U)(7) and (15)).</p>	<p>Verify that a spill is contained to the area immediately affected.</p> <p>Verify that facility personnel immediately disinfect the contaminated area.</p> <p>Verify that personnel record the spill incident in a bound log book, including all of the following information:</p> <ul style="list-style-type: none"> - quantity spilled - personnel involved - nature and consequences of the event. <p>Verify that the Department is immediately notified of a spill greater than 1 gal or 1 ft³ of dry waste by calling the 24-h Emergency Spill Telephone Number, 803-253-6488.</p> <p>Verify that personnel pick up, repackage as required, or otherwise remove the spilled material and make sure it gets treated.</p>
<p>5-154. Infectious waste treatment facilities and intermediate handling facilities must meet specific requirements for personnel training (R. 61.105(U)(8) and (15)).</p>	<p>Verify that all employees involved with handling and managing waste are trained for their responsibilities and duties.</p> <p>Verify that training documentation for employees is submitted to the Department within 30 days of completion.</p>
<p>5-155. Infectious waste treatment facilities receiving waste generated in a hospital or other generator that uses radioactive material must meet specific requirements (R. 61.105(U)(10)).</p>	<p>Determine if the infectious waste treatment facility receives waste generated in a hospital or from a generator that uses radioactive material.</p> <p>Verify that incoming waste is screened for radioactivity.</p> <p>Verify that the instrumentation used for radioactivity screening is approved by the Bureau of Radiological Health for this screening.</p> <p>Verify that the operator is properly trained to run the screening equipment.</p> <p>Verify that the screening equipment is calibrated once annually by an authorized calibrator.</p> <p>Verify that a log of quality assurance testing and calibration of the instrumentation is maintained.</p> <p>Verify that any and all incidents in which radioactive materials are detected are reported to the Bureau of Radiological Health for guidance in dealing with the radioactive materials.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-156. Infectious waste treatment facilities and intermediate handling facilities must meet specific requirements for vehicle management (R. 61.105 (U)(11), (U)(12), and (U)(15)).</p>	<p>Verify that facilities schedule shipments of waste to prevent a backlog of loaded transportation vehicles at the facility or offsite.</p> <p>(NOTE: The number of loaded and unloaded vehicles stored onsite is controlled by permit conditions.)</p> <p>Verify that facilities receiving waste generated offsite log in transport vehicles as they arrive at the facility, using a bound log book, and add notes to this book for every rejected shipment.</p>
<p>5-157. Infectious waste incinerators must meet specific requirements (R. 61.105(U)(13)).</p>	<p>Verify that incinerators provide complete combustion of the infectious waste to carbonized or mineralized ash and that they receive Departmental authorization for disposal of treatment residue before disposition into a South Carolina landfill.</p> <p>(NOTE: Authorization may be incorporated into a landfill permit.)</p>
<p>5-158. Steam sterilizers must meet specific requirements (R. 61.105 (U)(14)).</p>	<p>Verify that steam sterilizers meet all of the following conditions:</p> <ul style="list-style-type: none"> - Department-approved indicator organisms are used in test runs to assure proper treatment of wastes - use indicator organisms daily at a commercial facility and weekly at a generator facility in each steam sterilizer - record the temperature and time during each complete cycle to ensure the attainment of a temperature of 250 °F for 45 min or longer at 15 lb pressure, depending on quantity and density of the load, in order to achieve sterilization of the entire load, and keep records of these procedures for 3 yr - thermometers are checked for calibration at least annually - have a gauge that indicates the pressure of each cycle - use heat-sensitive tape or another device for each container processed to indicate that the steam sterilization temperature has been reached - use the biological indicator <i>Bacillus stearothermophilus</i> placed at the center of a load process under standard operating conditions to confirm the attainment of adequate sterilization conditions, and keep records of these procedures for 3 yr - receive Departmental authorization for disposal of treatment residue before treatment residue disposal into a sanitary landfill. <p>(NOTE: Waste is not considered appropriately treated if the heat-sensitive tape or other device indicates that the steam sterilization temperature has not been reached.)</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>5-159. Infectious waste treatment facilities must not exceed specific limits on the amount of waste they can treat (R. 61-105 (V)(2)).</p>	<p>Verify that no infectious waste treatment facility treats or disposes of more than the least of the following during any calendar month:</p> <ul style="list-style-type: none"> - 1500 tons - one-twelfth of the Department's most recent annual estimate of the amount of infectious waste generated in South Carolina.
<p>5-160. Infectious waste treatment facilities must meet specific requirements when accepting a manifested shipment (R. 61-105(X)(2)).</p>	<p>Verify that the infectious waste treatment facility operator or his authorized agent meets all the following conditions when accepting a manifested shipment:</p> <ul style="list-style-type: none"> - signs and dates each manifest copy to certify that the infectious waste was accepted - writes on the manifest the number of containers accepted and their total weight - notes any discrepancies greater than 1 percent of the container count or weight on the manifest - gives the transporter at least one signed manifest copy - certifies that there were no discrepancies greater than 1 percent or completes and submits a discrepancy report - signs and dates each manifest copy certifying when the waste was adequately treated - sends a completed manifest copy to the generator within 10 days of delivery - retains a completed manifest form copy for 3 yr.
<p>5-161. Treatment facility operators must meet specific requirements when discrepancies are discovered on manifest forms (R. 61-105(X)(4)).</p>	<p>Verify that when discrepancies are discovered, the operator meets all the following:</p> <ul style="list-style-type: none"> - attempts to resolve the discrepancy with the waste generator or transporter - if the discrepancy remains unresolved, the operator submits a letter to the Department within 5 days of receipt of the waste describing the nature of the discrepancy and the attempts the operator has made to reconcile it - includes a legible copy of the manifest in question in any letter to the Department.
<p>5-162. Treatment facility operators must meet specific requirements when receiving infectious waste from offsite not accompanied by a manifest (R. 61-105(X)(5)).</p>	<p>Verify that a treatment facility operator receiving infectious waste from offsite that is not accompanied by a manifest submits an unmanifested waste report to the Department within 15 days after receiving the waste.</p>

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE D (RCRA-D)
South Carolina Supplement

**REGULATORY
REQUIREMENTS:**

5-163. Treatment facilities must submit an annual report to the Department (R. 61-105(Y)(2)).

REVIEWER CHECKS:

Verify that treatment facilities submit an annual report to the Department for each calendar year by 15 February of the subsequent year.

Appendix 5 - 1

Acceptable Waste for Construction, Demolition, and Land-Clearing Debris Landfills (Source: R 61-107.11, Appendix I)

The following types of waste have been determined by the Department to be environmentally safe and may be accepted at construction, demolition, and land-clearing debris landfills, unless specifically prohibited by the Department. However, any of the materials listed in this appendix that have been painted with lead-based paint and/or have been in direct contact with hazardous constituents (e.g., petroleum products, pesticides, etc.) are prohibited from disposal at a construction, demolition, and land-clearing debris landfill.

Acceptable land-clearing debris such as:

earthen material (e.g., clays, sands, gravels, and silts)	top soil	root mats
logs	vegetation	brush and limbs
tree stumps	rock	

Acceptable construction and demolition debris such as:

structural steel	hardened concrete	glass
bricks and blocks	lumber	mirrors
plaster and plasterboard	insulation material	tires ⁽²⁾
shingles and roofing materials	floor, wall, and ceiling tile	other structural fabrics
hardened/cured asphalt ⁽¹⁾	hardened cement	floor coverings
pipes	glass wire (optical fiber)	wall coverings
poly fiberglass (highly polished, cured material used to build boats, etc.)	other items physically attached to the structure (e.g., signs, mail-boxes, awnings, etc.)	nonfriable asbestos-containing material ⁽³⁾

(1) Tar sealant material is not acceptable.

(2) Tires shall be reduced in size by a minimum of one eighth the size of the original tire prior to landfill disposal. Any landfill that accepts tires shall be required to obtain a waste tire disposal facility permit from the Department in addition to its landfill permit.

(3) Nonfriable asbestos-containing material in good condition and not handled in a way to render it a regulated material and thus subject to Bureau of Air Quality Control (BAQC) Regulation 61-86.1, *Standards of Performance for Asbestos Abatement Operations*, and the *National Emissions Standards for Hazardous Air Pollutants* (NES-HAPs) (40 CFR 61 Subpart M). Prior to disposal of any asbestos-containing material, the generator of the asbestos waste must have a permission for disposal letter from the Department's BAQC.

Appendix 5 - 2

Unacceptable Waste

(Source: R 61-107.11, Appendix II)

The following types of waste have been determined to pose a potential threat to the environment and may not be accepted at construction, demolition, and land-clearing debris landfills.

Any waste that has been in contact with lead base paint such as:

plaster and plasterboard	metal poles
concrete	painting equipment
wall paper	mechanical parts
containers (cans, buckets, etc.)	lumber (siding, cabinets, shingles, etc.)

Any waste that has been in contact with petroleum products such as:

storage tanks	containers
pipes	filters (oil, etc.)
concrete	absorbent (vermiculite)
soil	mechanical/machine parts
paper towels and rags	

Any waste that has been in contact with friable asbestos material such as:

pipe insulation	broken/chipped floor tiles
asbestos-cement products that have been crumbled/ pulverized	friable asbestos containing material ⁽¹⁾
roofing material that has been cut with a saw	

Any waste that has been in contact with PCBs such as:

transformers	capacitors
electrical components	lighting ballasts
any liquid containing PCBs	

(continued)

Appendix 5 - 2 (continued)

Any waste that has been in contact with solvents (industrial plants, chemical plants, laboratories, construction sites, etc.) such as:

caulking compounds	paint thinner
containers (packaging)	pipes
filters	vats
pumps	adhesives
mechanical/machine parts (valves)	cement
flooring (wood, carpet)	cabinets (shelves)
soil	tar
storage tanks	glazing compounds
absorbent	

Any waste that has been in contact with preservatives (pentachlorophenol, creosote, arsenic/chromium) such as:

railroad ties	utility poles
soil	containers
any mechanical part used in a manufacturing process	

Any waste that has been in contact with pesticides/herbicides such as:

containers (packaging)	vats
soil	concrete
mechanical/machine parts	wood (storage area)
any equipment used for application	

Miscellaneous waste such as:

lamps (mercury) ⁽²⁾	unpolished fiberglass (Bondo)
liquid waste (paint, paint thinner, etc.)	solid waste which may contain a waste or substance determined by the Department to be unacceptable

(1) Any waste containing friable asbestos material as defined by the BAQC Regulations 61-86.1 and NESHAPs shall be disposed of at a location approved by the BAQC.

(2) Fluorescent lamps and high intensity discharge (HID) lamps such as metal halide and mercury vapor lamps.

INSTALLATION:	COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE D (RCRA-D) South Carolina Supplement	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

SECTION 6

**RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE I (RCRA-I)**

South Carolina Supplement

SECTION 6

RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I (RCRA-I) South Carolina Supplement

Definitions

The following definitions were taken from the Underground Storage Tank (UST) Control Regulations from the South Carolina Department of Health and Environmental Control (DHEC), Groundwater Protection Division, R. 61 - 92, Part 280.

- *Aboveground Release* - any release to the surface of the land or to surface water. This includes releases from the aboveground portion of an UST system and aboveground releases associated with overfills and transfer operations as the regulated substance moves to or from a UST system.
- *Ancillary Equipment* - any device, including devices such as piping, fittings, flanges, valves, and pumps used to distribute, meter, or control the flow of regulated substances to and from a UST.
- *Belowground Release* - any release to the subsurface of the land and to groundwater. This includes releases from the belowground portions of a UST system and belowground releases associated with overfills and transfer operations as the regulated substance moves to or from a UST.
- *CERCLA* - the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, as amended.
- *Compatible* - the ability of two or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of the UST system under conditions likely to be encountered in the UST.
- *Consumptive Use* - with respect to heating oil, means consumed on the premises.
- *Corrosion Expert* - a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal UST. This person must be accredited or certified as being qualified by the National Association of Corrosion Engineers (NACE) or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control of buried or submerged metal piping systems and metal UST.
- *Department* - the South Carolina DHEC.
- *Dielectric Material* - a material that does not conduct direct electrical current. Dielectric coatings are used to electrically isolate UST systems from the surrounding soils. Dielectric bushings are used to electrically isolate portions of the UST system.

- **Excavation Zone** - the volume containing the UST system and backfill material bounded by the ground surface, walls, and floor of the pit and trenches into which the UST system is placed at the time of installation.
- **Existing UST System** - a UST system used to contain a regulated substance or for which installation has commenced on or before 22 December 1988. Installation is considered to have commenced if both of the following requirements are met:
 1. the installation has obtained all Federal, state, and local approvals or permits necessary to begin physical construction of the site or installation of the UST system
 2. at least one of the following two requirements is met:
 - a. a continuous onsite physical construction or installation program has begun
 - b. the installation has entered into contractual obligations that cannot be cancelled or modified without substantial loss, for physical construction at the site or installation of the UST system to be completed within a reasonable time.
- **Farm Tank** - a tank located on a tract of land devoted to the production of crops or raising of animals, including fish, and associated residences and improvements. A farm tank must be located on farm property. *Farm* includes fish hatcheries, rangeland, and nurseries with growing operations.
- **Flow-Through Process Tank** - a tank that forms an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of materials during the operation of the process. Flow-through process tanks do not include tanks used for the storage of materials prior to their introduction into the production process or for the storage of finished products or byproducts from the production process.
- **Free Product** - refers to a regulated substance that is present as a nonaqueous phase liquid.
- **Gathering Lines** - any pipeline, equipment, facility, or building used in the transportation of oil or gas during oil or gas production or gathering operations.
- **Hazardous Substance UST System** - a UST system that contains a hazardous substance defined in *CERCLA*, except subtitle C, or any mixture of these substances and petroleum, and that is not a petroleum UST system.
- **Heating Oil** - petroleum that is any of the following:
 1. No. 1, No. 2, No. 4-light, No. 4-heavy, No. 5-light, No. 5-heavy, and No. 6 technical grades of fuel oil
 2. other residual fuel oils (including Navy Special Fuel Oil and Bunker C)
 3. other fuels when used as substitutes for one of these fuel oils.

Heating oil is typically used in the operation of heating equipment, boilers, or furnaces.
- **Hydraulic Lift Tank** - a tank holding hydraulic fluid for a closed-loop mechanical system that uses compressed air or hydraulic fluid to operate lifts, elevators, and other similar devices.
- **Liquid Trap** - sumps, well cellars, and other traps used in association with oil and gas production, gathering, and extraction operations (including gas production plants) for the purpose of collecting oil, water, and other liquids. These liquid traps may temporarily collect liquids for subsequent disposition or reinjection into a production or pipeline stream, or may collect and separate liquids from a gas stream.
- **Maintenance** - the normal operational upkeep to prevent a UST system from releasing product.

- **Motor Fuel** - petroleum or a petroleum-based substance that is motor gasoline, aviation gasoline, No. 1 or No. 2 diesel fuel, or any grade of gasohol, and is typically used in the operation of a motor engine.
- **New UST System** - a UST system that will be used to contain an accumulation of regulated substances and for which installation has commenced after 22 December 1988.
- **Noncommercial Purposes** - with respect to motor fuel, means not for resale.
- **On the Premises Where Stored** - with respect to heating oil, means UST systems located on the same property where the stored heating oil is used.
- **Operational Life** - refers to the period beginning when installation of the UST system has commenced until the time the UST system is properly closed.
- **Operator** - any person in control of, or having responsibility for, the daily operation of the UST system.
- **Overfill Release** - a release that occurs when a UST is filled beyond its capacity, resulting in a discharge of the regulated substance to the environment.
- **Owner** - in the case of a UST system in use on 8 November 1984, or brought into use after that date, any person who owns an UST system used for storage, use, or dispensing of regulated substances; in the case of any UST system in use before 8 November 1984 but no longer in use on that date, any person who owned the UST immediately before the discontinuation of its use.
- **Person** - an individual, trust, firm, joint stock company, Federal agency, corporation, state, municipality, commission, political subdivision of a state, any interstate body, consortium, joint venture, commercial entity, and the U.S. Government.
- **Petroleum UST System** - a UST system that contains petroleum or a mixture of petroleum with de minimis quantities of other regulated substances. These systems include those containing motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.
- **Pipe or Piping** - a hollow cylinder or tubular conduit constructed of nonearthen materials.
- **Pipeline Facilities** (including gathering lines) - new and existing pipe rights-of-way and any associated equipment, facilities, or buildings.
- **Regulated Substance** - any substance defined in CERCLA, except hazardous wastes and petroleum, including crude oil or any fraction thereof that is liquid at standard conditions of temperature and pressure (60 °F (15.6 °C) and 14.7 psia). This includes petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons derived from crude oil through processes of separation, conversion, upgrading, and finishing, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.
- **Release** - any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from a UST into groundwater, surface water, or subsurface soils.

- **Release Detection** - determining whether a release of a regulated substance has occurred from the UST system into the environment or into the interstitial space between the UST system and its secondary barrier or secondary containment around it.
- **Repair** - to restore a UST or UST system component that has caused a release of product from the UST system.
- **Residential Tank** - a tank located on property used primarily for dwelling purposes.
- **Secondary Containment** - an impervious layer of materials installed around a UST system, so any volume of regulated substances that may be released from a UST will be prevented from contacting the environment outside the impervious layer for the period of time necessary to detect and recover released, regulated substances. Materials or devices used to provide a secondary containment may include concrete, impervious liners, double-wall UST or other materials or devices, singularly or in combination, approved by the Department.
- **Septic Tank** - a water-tight covered receptacle designed to receive or process, through liquid separation or biological digestion, the sewage discharged from a building sewer. The effluent from the receptacle is distributed for disposal through the soil, and settled solids and scum from the tank are pumped out periodically and hauled to a treatment facility.
- **Stormwater or Wastewater Collection System** - piping, pumps, conduits, and any other equipment necessary to collect and transport the flow of surface water runoff resulting from precipitation or domestic, commercial, or industrial wastewater to and from retention areas or any areas where treatment is designated to occur. The collection of stormwater and wastewater does not include treatment except when incidental to conveyance.
- **Surface Impoundment** - a natural topographic depression, manmade excavation, or diked area formed primarily of earthen materials (although it may be lined with manmade materials) that is not an injection well.
- **Tank** - a stationary device designed to contain an accumulation of regulated substances and constructed of non-earthen materials that provide structural support.
- **Tank System** - see UST System.
- **Underground Storage Tank or UST** - any one or combination of tanks (including underground pipes connected thereto) used to contain an accumulation of regulated substances, and the volume of which (including the volume of underground pipes connected thereto) is 10 percent or more beneath the surface of the ground. This term does not include any of the following:
 1. a farm or residential tank of 1100 gal or less capacity used for storing motor fuel for noncommercial purposes
 2. a tank used for storing heating oil for consumptive use on the premises where stored
 3. a septic tank
 4. a pipeline facility (including gathering lines) regulated under:
 - a. the *Natural Gas Pipeline Safety Act of 1968*
 - b. the *Hazardous Liquid Pipeline Safety Act of 1979*
 - c. that is an intrastate pipeline facility regulated under state laws comparable to the provisions of the *Natural Gas Pipeline Safety Act* or the *Hazardous Liquid Pipeline Safety Act*
 5. surface impoundment, pit, pond, or lagoon

6. stormwater or wastewater collection system
7. flow-through process tank
8. liquid trap or associated gathering lines directly related to oil or gas production and gathering operations
9. storage tank situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

The term excludes any pipes connected to any tank described in this definition.

- *Upgrade* - the addition or retrofit of some systems such as cathodic protection, lining, or spill and over-fill controls to improve the ability of a UST system to prevent the release of product.
- *UST System* - a UST, connected underground piping, underground ancillary equipment, and containment system, if any.
- *Wastewater Treatment Tank* - a tank designed to receive and treat influent wastewater through physical, chemical, or biological methods.

**RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE I (RCRA-I)
GUIDANCE FOR SOUTH CAROLINA CHECKLIST USERS**

APPLICABILITY:	REFER TO CHECKLIST ITEMS:
All Installations	6-1
Notification and Permits	6-2 and 6-3
Reporting and Recordkeeping	6-4
Performance Standards for New UST Systems	6-5 through 6-8
Testing a New UST	6-9
Upgrading Existing USTs	6-10
General Operating Requirements	6-11 through 6-14
Release Detection	6-15 through 6-27
Release Reporting, Investigation, and Confirmation	6-28 through 6-30
Release Response and Corrective Action	6-31 through 6-36
Out-of-Service UST Systems and Closure	6-37 through 6-40

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE I (RCRA-I)
South Carolina Supplement**

**REGULATORY
REQUIREMENTS:**

REVIEWER CHECKS:

ALL INSTALLATIONS

6-1. Specific UST systems are exempt from these requirements (DHEC 280.10).

Determine if the installation has any of the following UST systems, which are exempt:

- any UST system holding hazardous wastes listed or identified under Subtitle C of the *Solid Waste Disposal Act*, or a mixture of those hazardous wastes and other regulated wastes
- any wastewater treatment tank system that is part of a wastewater treatment facility regulated under the *Clean Water Act*
- equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks
- any UST system with a capacity of 110 gal or less
- any UST system that contains a *de minimis* concentration of regulated substance
- any emergency spill or overflow containment system that is expeditiously emptied after use.

Determine if the installation has any of the following UST systems, which are partially exempt:

- wastewater treatment tank systems
- any UST system containing radioactive materials that are regulated under the *Atomic Energy Act of 1954*
- any UST system that is part of an emergency generator system at nuclear power generation facilities regulated by the Nuclear Regulatory Commission
- airport hydrant fuel distribution systems
- UST systems with field constructed tanks.

Verify that partially exempt UST systems installed for the purpose of storing regulated substances meet the following requirements:

- prevent releases due to corrosion or structural failure for the operational life of the UST system
- are cathodically protected against corrosion, constructed of noncorrodible material, steel clad with a noncorrodible material, or designed in a manner to prevent the release or threatened release of any stored substance
- constructed or lined with material that is compatible with the stored substance.

(NOTE: A UST system without corrosion protection may be installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life. The installation must maintain records that demonstrate compliance with these requirements for the remaining life of the UST.)

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE I (RCRA-I)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>NOTIFICATION AND PERMITS</p> <p>6-2. The installation must meet notification requirements for UST (DHEC 280.22 (a), (b), (d), and (e)).</p> <p>6-3. Permits are required for the construction and operation of new USTs (DHEC 280.23 (a) and (b)).</p>	<p>Verify that the installation notifies the Department of the existence of a UST within the following parameters:</p> <ul style="list-style-type: none"> - UST brought into operation after 1 January 1986, notice within 30 days of the start of operation - UST storing regulated substances on or before 1 January 1986, by January 1986 - UST taken out of operation after 1 January 1974. <p>Verify that the installation holds a construction permit prior to the installation of a new UST.</p> <p>Verify that the installation holds an operating permit prior to the operation of a new UST.</p> <p>Verify that the terms of these permits are met.</p>
<p>REPORTING AND RECORDKEEPING</p> <p>6-4. Installations must meet reporting and recordkeeping requirements (DHEC 280.34).</p>	<p>Verify that the installation submits the following information to the Department:</p> <ul style="list-style-type: none"> - notification for all UST systems, including certification of installation for new UST systems - reports of all releases, including suspected releases, spills and overfills, and confirmed releases - corrective actions planned or taken, including initial abatement measures, initial site characterization, free product removal, investigation of soil and ground-water cleanup, and corrective action plan - a notification before permanent closure or change-in-service. <p>Verify that the installation maintains the following information:</p> <ul style="list-style-type: none"> - a corrosion expert's analysis of site corrosion potential if corrosion protection equipment is not used - documentation of the operation of corrosion protection equipment - documentation of UST system repairs - recent compliance with release detection requirements - results of the site investigation conducted at permanent closure.

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I (RCRA-I) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
6-4. (continued)	Verify that these records are kept either at the UST site and immediately available for inspection or at a readily available alternative site. (NOTE: In the case of permanent closure records, the installation may mail closure records to the Department if they cannot be kept at the site or an alternative site.)
PERFORMANCE STANDARDS FOR NEW UST SYSTEMS	
6-5. UST must be designed and constructed to meet specific standards (DHEC 280.20 (a)).	Verify that any portion of a UST which routinely contains a product is protected from corrosion in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory. Verify that USTs are constructed of fiberglass-reinforced plastic, steel with cathodic protection, steel-fiberglass-reinforced-plastic composite, or metal without additional corrosion protection. Verify that the UST construction and corrosion protection are approved by the Department. Verify that, if the UST is constructed of steel, the cathodic protection meets the following requirements: <ul style="list-style-type: none"> - the UST is coated with a suitable dielectric material - field-installed cathodic protection systems are designed by a corrosion expert - current systems are designed to allow determination of current operating status - cathodic protection systems are operated and maintained. Verify that, if the UST is constructed of metal without additional corrosion protection measures, the UST is installed at a site determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life, and the installation maintains records to that effect for the remaining life of the UST.
6-6. UST piping must be designed and constructed to meet specific standards (DHEC 280.20 (b)).	Verify that piping which routinely contains regulated substances and is in contact with the ground is properly designed, constructed, and protected from corrosion in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory. Verify that UST piping is constructed of fiberglass, reinforced plastic, cathodically protected steel, or metal without additional corrosion protection measures. Verify that the piping construction and corrosion protection are approved by the Department.

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE I (RCRA-I)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
6-6. (continued)	<p>Verify that, if the piping is constructed of steel, its cathodic protection meets the following requirements:</p> <ul style="list-style-type: none"> - the piping is coated with a suitable dielectric material - field-installed cathodic protection systems are designed by a corrosion expert - impressed current systems are designed to allow determination of current operating status - cathodic protection systems are operated and maintained. <p>Verify that, if the piping is constructed of metal without additional corrosion protection measures, the piping is installed at a site determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life and the installation maintains records to that effect for the remaining life of the piping.</p>
<p>6-7. Specific spill and overfill protection equipment must be used (DHEC 280.20 (c)).</p>	<p>(NOTE: If a UST system is filled by transfers of no more than 25 gal at a time, the UST system is exempt from the following requirements.)</p> <p>Verify that spill prevention equipment will prevent release of product to the environment when the transfer hose is detached from the fill pipe.</p> <p>Verify that overfill prevention equipment will automatically shut off the flow into the UST when the UST is no more than 95 percent full or will alert the transfer operator when the UST is no more than 90 percent full by restricting the flow into the UST or by triggering a high level alarm.</p> <p>(NOTE: Alternate equipment may be used if approved by the Department.)</p>
<p>6-8. UST and piping must be installed to meet specific requirements (DHEC 280.20 (d) through (h)).</p>	<p>Verify that UST and piping are installed in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and in accordance with the manufacturer's instructions.</p> <p>Verify that the installation holds a permit to operate, signifying that the UST has been certified.</p> <p>Verify that all new UST installed within 100 ft of an existing water supply well install an approved method of secondary containment.</p> <p>Verify that regulated substances are not introduced into a newly installed UST until the UST is tested.</p>

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I (RCRA-I) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
TESTING A NEW UST 6-9. All newly installed USTs must be tested (DHEC 280.24 (a)).	<p>Verify that all newly installed tanks, before being covered, enclosed, or placed in operation, are hydrostatically tested to 150 percent of the maximum anticipated pressure of the system or pneumatically tested to 100 percent of the maximum anticipated pressure of the system, but not less than 50 psig at the highest point of the system.</p> <p>Verify that, if a pneumatic test is performed, all joints and connections are sprayed with a soap solution, and the test is maintained for a time sufficient to complete visual inspection for all joints and connections, but not less than 10 min.</p> <p>Verify that the UST is tested for tightness hydrostatically or with air pressure at not less than 3 psi and not more than 5 psi after installation but before being covered and placed in use.</p> <p>Verify that pneumatic tests are not performed after regulated substances have been placed in a UST.</p>
UPGRADING EXISTING USTS 6-10. All existing UST systems must be upgraded by 22 December 1998 (DHEC 280.21 (a) through (d)).	<p>Verify that by 22 December 1998 all existing UST systems comply with one of the following requirements:</p> <ul style="list-style-type: none"> - the new UST system performance standards - the upgrading requirements - the closure requirements. <p>Verify that the upgrading of steel USTs is in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and is by one of the following methods:</p> <ul style="list-style-type: none"> - interior lining - cathodic protection - a combination of interior lining and cathodic protection. <p>Verify that USTs upgraded by internal lining meet the following requirements:</p> <ul style="list-style-type: none"> - the lining is installed according to the requirements for repairs - within 10 yr after lining, and every 5 yr thereafter, the lined UST is internally inspected and found to be structurally sound with the lining still performing in accordance with original design specifications.

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE I (RCRA-I)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
6-10. (continued)	<p>Verify that USTs upgraded by cathodic protection meet the following requirements:</p> <ul style="list-style-type: none"> - field-installed cathodic protection systems are designed by a corrosion expert - impressed current systems are designed to allow determination of current operating status - cathodic protection systems are operated and maintained. <p>Verify that USTs upgraded by cathodic protection meet one of the following requirements to ensure the integrity of the UST:</p> <ul style="list-style-type: none"> - the UST is internally inspected and assessed to ensure that the UST is structurally sound and free of corrosion holes prior to installing the cathodic protection system - the UST has been installed for less than 10 yr and is monitored monthly for releases - the UST has been installed for less than 10 yr and is assessed for corrosion holes by conducting two tightness tests according to the following requirements: <ul style="list-style-type: none"> - the first tightness test is conducted prior to installing the cathodic protection system - the second tightness test is conducted between 3 and 6 mo following the first operation of the cathodic protection system - the UST is assessed for corrosion holes by a method approved by the Department. <p>Verify that USTs upgraded by both internal lining and cathodic protection meet the following requirements:</p> <ul style="list-style-type: none"> - the lining is installed according to the requirements for repairs - field-installed cathodic protection systems are designed by a corrosion expert. - impressed current systems are designed to allow determination of current operating status - cathodic protection systems are operated and maintained. <p>Verify that, to prevent spilling and overfilling associated with product transfer to the UST system, all existing UST systems comply with new UST system spill and overfill prevention equipment requirements.</p> <p>(NOTE: If a UST system is filled by transfers of no more than 25 gal at a time, the UST system is exempt from the spill and overfill prevention requirements.)</p> <p>Verify that spill prevention equipment to prevent release of product to the environment when the transfer hose is detached from the fill pipe is used.</p>

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I (RCRA-I) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
6-10. (continued)	<p>Verify that overfill prevention equipment will automatically shut off the flow into the UST when the UST is no more than 95 percent full or will alert the transfer operator when the UST is no more than 90 percent full by restricting the flow into the UST or by triggering a high level alarm is used.</p> <p>(NOTE: Alternate equipment may be used if approved by the Department.)</p>
GENERAL OPERATING REQUIREMENTS	
6-11. Spill and overfill control equipment must be operated according to specific requirements (DHEC 280.30).	<p>Verify that the volume available in the UST is greater than the volume of product to be transferred to the UST before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling.</p> <p>Verify that the installation reports, investigates, and cleans up any spills and overfills.</p>
6-12. Corrosion protection equipment must be operated and maintained according to specific requirements (DHEC 280.31).	<p>Verify that all corrosion protection systems are operated and maintained to continuously provide protection to the metal components of the portion of the tank and piping which routinely contain regulated substances and are in contact with the ground.</p> <p>Verify that UST systems with impressed current cathodic protection systems are inspected every 60 days to ensure the equipment is running properly.</p> <p>Verify that all UST systems equipped with cathodic protection systems are inspected for proper operation by a qualified cathodic protection tester in accordance with the following requirements:</p> <ul style="list-style-type: none"> - all cathodic protection systems are tested within 6 mo of installation and at least every 3 yr thereafter - the criteria used to determine that cathodic protection is adequate are in accordance with a code of practice developed by a nationally recognized association. <p>Verify that records of the operation of cathodic protection systems are maintained to demonstrate compliance with the performance standards in this section, including:</p> <ul style="list-style-type: none"> - the results of the last three inspections of impressed current cathodic protection systems - the results of testing from the last two inspections by a qualified cathodic protection tester.

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE I (RCRA-I)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>6-13. The UST system and the regulated product it stores must be compatible (DHEC 280.32).</p> <p>6-14. Repairs to a UST system must be conducted in a manner that prevents releases due to structural failure or corrosion as long as the UST system is used to store regulated substances (DHEC 280.33).</p>	<p>Verify that the installation uses a UST system made of or lined with materials that are compatible with the substance stored in the UST system.</p> <p>Verify that repairs to a UST system meet the following requirements:</p> <ul style="list-style-type: none"> - repairs are conducted in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory - repairs to fiberglass-reinforced plastic USTs are made either by the manufacturer's authorized representatives or in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory - metal pipe sections and fittings that have released product as a result of corrosion or other damage are replaced - fiberglass pipes and fittings that have released product as a result of corrosion or other damage are replaced or repaired according to the manufacturer's specifications. <p>Verify that repaired USTs and piping are tightness tested within 30 days following the date of the completion of the repair unless one of the following conditions apply:</p> <ul style="list-style-type: none"> - the repaired UST is internally inspected in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory - the repaired portion of the UST system is monitored monthly for releases - another test method approved by the Department.
<p>RELEASE DETECTION</p> <p>6-15. All UST systems must meet specific operating requirements (DHEC 280.40).</p>	<p>(NOTE: This section does not apply to any UST system that stores fuel solely for use by emergency power generators.)</p> <p>Verify that release detection methods meet all of the following requirements:</p> <ul style="list-style-type: none"> - detect a release from any portion of the UST and the connected underground piping that routinely contains product - installed, calibrated, operated, and maintained in accordance with the manufacturer's instructions, including routine maintenance and service checks for operability or running condition

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE I (RCRA-I)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
6-15. (continued)	<ul style="list-style-type: none"> - with any performance claims and their manner of determination are described in writing by the equipment manufacturer or installer - able to detect the specified leak rate or quantity with a probability of detection of 0.95 and a probability of false alarm of 0.05, except for methods permanently installed prior to 22 December 1990. <p>Verify that, when a release detection method indicates a release may have occurred, the installation notifies the Department.</p> <p>Verify that the installation complies with the UST and suction piping release detection requirements for systems installed before 1980 for new USTs, and for systems with unknown installation dates.</p> <p>Verify that the installation complies with the UST and suction piping release detection requirements for systems installed between 1980 and 1988 by 22 December 1993.</p> <p>Verify that any existing UST system which cannot apply a method of release detection to comply with these requirements initiates closure procedures by the date on which release detection is required.</p>
<p>6-16. Petroleum UST systems must implement release detection (DHEC 280.41).</p>	<p>Verify that one of the following methods of release detection is conducted for USTs:</p> <ul style="list-style-type: none"> - monitoring - inventory control and 5 yr tank tightness testing - inventory control and 1 yr tank tightness testing - weekly tank gauging. <p>Verify that USTs using monitoring use one of the following methods of release detection at least every 30 days:</p> <ul style="list-style-type: none"> - automatic tank gauging - vapor monitoring - groundwater monitoring - interstitial monitoring - other methods approved by the Department. <p>Verify that USTs using inventory control and 5 yr tank tightness testing meet the following requirements:</p> <ul style="list-style-type: none"> - the UST system meets the performance standards for new UST systems or the upgrading of existing USTs - the monthly inventory control requirements below or the manual tank gauging requirements - tank tightness testing at least every 5 yr.

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE I (RCRA-I)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
6-16. (continued)	<p>(NOTE: This option is available only until 22 December 1998 or until 10 yr after the UST is installed or upgraded, whichever is later.)</p> <p>Verify that USTs that use inventory control and 1 yr tank tightness testing meet the following requirements:</p> <ul style="list-style-type: none"> - the monthly inventory control requirements or the manual tank gauging requirements - tank tightness testing at least every year. <p>(NOTE: This option is available only until 22 December 1998 when the UST must be upgraded or permanently closed.)</p> <p>Verify that only USTs having a capacity of 550 gal or less use weekly tank gauging.</p> <p>Verify that pressurized piping which routinely contains regulated substances is monitored for releases using one of the following methods:</p> <ul style="list-style-type: none"> - an automatic line leak detector - an annual line tightness test - monthly monitoring. <p>Determine if the installation has any suction piping that is designed and constructed to meet the following standards:</p> <ul style="list-style-type: none"> - below-grade piping that operates at less than atmospheric pressure - below-grade piping is sloped so the contents of the pipe will drain back into the UST if the suction is released - only one check valve is included in each suction line - the check valve is located directly below and as close as practical to the suction pump. <p>(NOTE: Suction piping meeting the above standards is exempt from the following release detection requirements.)</p> <p>Verify that suction piping that routinely contains regulated substances is monitored for releases using either a line tightness test conducted at least every 3 yr or a monthly monitoring method including:</p> <ul style="list-style-type: none"> - vapor monitoring - groundwater monitoring - interstitial monitoring - other methods approved by the Department.

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE I (RCRA-I)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>6-17. Hazardous substance UST systems must implement release detection (DHEC 280.42).</p>	<p>Verify that release detection at existing hazardous substance UST systems meets the requirements for petroleum UST systems.</p> <p>Verify that, by 22 December 1998, all existing hazardous substance UST systems meet the release detection requirements for new systems.</p> <p>Verify that secondary containment systems at new hazardous substance UST systems are designed, constructed, and installed to meet the following requirements:</p> <ul style="list-style-type: none"> - it contains regulated substances released from the UST system until they are detected and removed - it prevents the release of regulated substances to the environment at any time during the operational life of the UST system - it is checked for evidence of a release at least every 30 days. <p>Verify that, at new hazardous substance UST systems, double-walled USTs are designed, constructed, and installed to contain a release from any portion of the inner tank within the outer wall, and to detect the failure of the inner wall.</p> <p>Verify that, at new hazardous substance UST system., external liners (including vaults) are designed, constructed, and installed to meet the following requirements:</p> <ul style="list-style-type: none"> - they must contain 100 percent of the capacity of the largest UST within its boundary - they must prevent the interference of precipitation or groundwater intrusion with the ability to contain or detect a release of regulated substances - they must surround the UST completely. <p>Verify that, at new hazardous substance UST systems, underground piping is equipped with secondary containment which satisfies the following requirements:</p> <ul style="list-style-type: none"> - it must contain regulated substances released from the piping until they are detected and removed - it must prevent the release of regulated substances to the environment at any time during the operational life of the piping - it must be checked for evidence of a release at least every 30 days <p>Verify that, at new hazardous substance UST systems, underground piping which conveys regulated substances under pressure is equipped with an automatic line leak detector.</p> <p>(NOTE: At new hazardous substance UST systems, other methods of release detection approved by the Department may be used.)</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE I (RCRA-I)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:												
6-18. Inventory control for USTs must meet specific requirements (DHEC 280.43(a)).	<p>Verify that inventory control is conducted monthly to detect a release of at least 1.0 percent of flow-through plus 130 gal on a monthly basis in the following manner:</p> <ul style="list-style-type: none">- inventory volume measurements for regulated substance inputs, withdrawals, and the amount still remaining in the UST are recorded each operating day- the equipment used is capable of measuring the level of product over the full range of the USTs height to the nearest 1/8 in.- the regulated substance inputs are reconciled with delivery receipts by measurement of the tank inventory volume before and after delivery- deliveries are made through a drop tube that extends to within 1 ft of the UST bottom- product dispensing is metered and recorded within the local standards for meter calibration or an accuracy of 6 in.³ for every 5 gal of product withdrawn- the measurement of any water level in the bottom of the UST is made to the nearest 1/8 in. at least once per month.												
6-19. Manual tank gauging for USTs must meet specific requirements (DHEC 280.43(b)).	<p>Verify that manual tank gauging meets the following requirements:</p> <ul style="list-style-type: none">- UST liquid level measurements are taken at the beginning and ending of a period of at least 36 h, during which period no liquid is added to or removed from the UST- level measurements are based on an average of two consecutive stick readings at both the beginning and end of the period- the equipment used is capable of measuring the level of product over the full range of the USTs height to the nearest 1/8 in. <p>(NOTE: Only USTs of 550 gal or less nominal capacity may use manual tank gauging as the sole method of release detection. USTs of 551 to 2000 gal may use manual tank gauging in place of manual inventory control. USTs of greater than 2000 gal nominal capacity may not use manual tank gauging to meet these requirements.)</p> <p>(NOTE: A leak is suspected if the variation between beginning and ending measurements exceeds the weekly or monthly standards in the following table:</p> <table><tr><th>Nominal UST Capacity</th><th>Weekly Standard (one test)</th><th>Monthly Standard (average of four tests)</th></tr><tr><td>550 gal or less</td><td>10 gal</td><td>5 gal</td></tr><tr><td>551 to 1000 gal</td><td>13 gal</td><td>7 gal</td></tr><tr><td>1001 to 2000 gal</td><td>26 gal</td><td>13 gal.)</td></tr></table>	Nominal UST Capacity	Weekly Standard (one test)	Monthly Standard (average of four tests)	550 gal or less	10 gal	5 gal	551 to 1000 gal	13 gal	7 gal	1001 to 2000 gal	26 gal	13 gal.)
Nominal UST Capacity	Weekly Standard (one test)	Monthly Standard (average of four tests)											
550 gal or less	10 gal	5 gal											
551 to 1000 gal	13 gal	7 gal											
1001 to 2000 gal	26 gal	13 gal.)											
6-20. Tank tightness testing for USTs must meet specific requirements (DHEC 280.43(c)).	<p>Verify that tank tightness testing is capable of detecting a 0.1 gal/h leak rate from any portion of the UST that routinely contains product while accounting for the effects of thermal expansion or contraction of the product, vapor pockets, UST deformation, evaporation, or condensation, and the location of the water table.</p>												

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE I (RCRA-I)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>6-21. Automatic tank gauging for USTs must meet specific requirements (DHEC 280.43(d)).</p>	<p>Verify that the equipment for automatic tank gauging which tests for the loss of product and conducts inventory control meets the following requirements:</p> <ul style="list-style-type: none"> - the automatic product level monitor test can detect a 0.2 gal/h leak rate from any portion of the UST that routinely contains product - inventory control or another test of equivalent performance is conducted.
<p>6-22. Vapor monitoring for USTs must meet specific requirements (DHEC 280.43(e)).</p>	<p>Verify that testing or monitoring for vapors within the soil gas of the excavation zone meets the following requirements:</p> <ul style="list-style-type: none"> - the materials used as backfill are sufficiently porous (i.e., gravel, sand, crushed rock) to readily allow diffusion of vapors from releases into the excavation area - the stored regulated substance, or a tracer compound placed in the UST system, is sufficiently volatile (i.e., gasoline) to result in a vapor level detectable by the monitoring devices located in the excavation zone in the event of a release from the UST - the measurement of vapors by the monitoring device is not rendered inoperative by the groundwater, rainfall, soil moisture, or other known interferences so a release could go undetected for more than 30 days - the level of background contamination in the excavation zone will not interfere with the method used to detect releases from the UST - the vapor monitors are designed and operated to detect any significant increase in concentration above background of the regulated substance stored in the UST system, a component or components of that substance, or a tracer compound placed in the UST system - in the UST excavation zone, the site is assessed to ensure compliance with these requirements and to establish the number and positioning of monitoring wells to detect releases within the excavation zone from any portion of the UST that routinely contains product - monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.
<p>6-23. Groundwater monitoring for USTs must meet specific requirements (DHEC 280.43(f)).</p>	<p>Verify that testing or monitoring for liquids in the groundwater meets the following requirements:</p> <ul style="list-style-type: none"> - the regulated substance stored is immiscible in water and has a specific gravity of less than 1 - groundwater is never more than 20 ft from the ground surface and the hydraulic conductivity of the soil(s) between the UST system and the monitoring wells or devices is not less than 0.01 cm/s (i.e., the soil should consist of gravels, coarse to medium sands, coarse silts or other permeable materials)

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE I (RCRA-I)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>6-23. (continued)</p>	<ul style="list-style-type: none"> - the slotted portion of the monitoring well casing is designed to prevent migration of natural soils or filter pack into the well and to allow entry of regulated substance on the water table into the well under both high and low groundwater conditions - monitoring wells are sealed from the ground surface to the top of the filter pack - monitoring wells or devices intercept the excavation zone or are as close to it as is technically feasible - the continuous monitoring devices or manual methods used can detect the presence of at least 1/8 in. of free product on top of the groundwater in the monitoring wells - within and immediately below the UST system excavation zone, the site is assessed to ensure compliance with these requirements and to establish the number and positioning of monitoring wells or devices which will detect releases from any portion of the UST that routinely contains product - monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.
<p>6-24. Interstitial monitoring for USTs must meet specific requirements (DHEC 280.43(g)).</p>	<p>Verify that interstitial monitoring between the UST system and a secondary barrier immediately around or beneath it may be used, but only if the system is designed, constructed, and installed to detect a leak from any portion of the UST which routinely contains product and also meets one of the following requirements:</p> <ul style="list-style-type: none"> - for double-walled UST systems, the sampling or testing method can detect a release through the inner wall in any portion of the UST which routinely contains product - for UST systems with a secondary barrier within the excavation zone, the sampling or testing method used can detect a release between the UST system and the secondary barrier - the secondary barrier around or beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable (at least 10^{-6} cm/s for the regulated substance stored) to direct a release to the monitoring point and permit its detection - the barrier is compatible with the regulated substance stored so a release from the UST system will not cause a deterioration of the barrier and allow a release to pass through undetected - for cathodically protected USTs, the secondary barrier is installed so that it does not interfere with the proper operation of the cathodic protection system - the groundwater, soil moisture, or rainfall will not render the testing or sampling method used inoperative so a release could go undetected for more than 30 days - the site is assessed to ensure that the secondary barrier is always above the groundwater and not in a 25-yr floodplain, unless the barrier and monitoring designs are for use under these conditions

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I (RCRA-I) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
6-24. (continued)	<ul style="list-style-type: none"> - monitoring wells are clearly marked and secured to avoid unauthorized access and tampering - for USTs with an internally fitted liner, an automated device can detect a release between the inner wall of the UST and the liner, and the liner is compatible with the substance stored.
6-25. Other methods of release detection for USTs must meet specific requirements (DHEC 280.43(h)).	<p>Verify that any other type of release detection method, or combination of methods, meets one of the following requirements:</p> <ul style="list-style-type: none"> - it can detect a 0.2 gal/h leak rate or a release of 150 gal within a month with a probability of detection of 0.95 and a probability of false alarm of 0.05 - it is approved by the Department.
6-26. Methods of release detection for piping must meet specific requirements (DHEC 280.44).	<p>Verify that automatic line leak detectors do one of the following:</p> <ul style="list-style-type: none"> - alert the operator to the presence of a leak by restricting or shutting off the flow of regulated substances through piping - alert the operator by triggering an audible or visual alarm if they detect leaks of 3 gal/h at 10 psi line pressure within 1 h. <p>Verify that an annual test of the operation of the leak detector is conducted in accordance with the manufacturer's requirements.</p> <p>Verify that line tightness tests can detect a 0.1 gal/h leak rate at 1.5 times the operating pressure.</p> <p>(NOTE: The tank methods of release detection vapor monitoring, groundwater monitoring, interstitial monitoring, and other methods approved by the Department may be used to detect releases from piping if they can detect a release from any portion of the underground piping that routinely contains regulated substances.)</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE I (RCRA-I)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>6-27. Records of release detection must be kept according to specific standards (DHEC 280.45).</p> <p>RELEASE REPORTING, INVESTIGATION, AND CONFIRMATION</p> <p>6-28. The installation must report specific conditions (DHEC 280.50).</p>	<p>Verify that the installation maintains records demonstrating release detection compliance that includes the following:</p> <ul style="list-style-type: none"> - all written performance claims pertaining to any release detection system used, and the manner in which these claims have been justified or tested by the equipment manufacturer or installer are maintained for 5 yr from the date of installation - the results of any sampling, testing, or monitoring are maintained for 1 yr - the results of tank tightness testing are maintained until the next test is conducted - written documentation of all calibration, maintenance, and repair of release detection equipment permanently located onsite are maintained for at least 1 yr after the servicing work is completed - any schedule of required calibration and maintenance provided by the release detection equipment manufacturer are retained for 5 yr from the date of installation. <p>Verify that the installation reports to the Department within 72 h and begins investigation and confirmation for any of the following conditions:</p> <ul style="list-style-type: none"> - the discovery of released regulated substances at the UST site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface water) - unusual operating conditions observed by the installation (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST system, or an unexplained presence of water in the UST), unless system equipment is found to be defective but not leaking, and is immediately repaired or replaced - monitoring results from a release detection method indicate a release may have occurred, unless either of the following are true: <ul style="list-style-type: none"> - the monitoring device is found to be defective and is immediately repaired, recalibrated or replaced, and additional monitoring does not confirm the initial result - in the case of inventory control, a second month of data does not confirm the initial result.

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE I (RCRA-I)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>6-29. The installation must investigate and attempt to confirm specific conditions (DHEC 280.52).</p>	<p>Verify that the installation immediately investigates and attempts to confirm all suspected releases of regulated substances requiring reporting within 7 days, unless corrective action is initiated as below.</p> <p>Verify that the installation conducts tightness testing to determine whether a leak exists in the portion of the UST which routinely contains product, or the attached delivery piping, or both.</p> <p>Verify that the installation repairs, replaces, or upgrades the UST system, and begins corrective action if the test results for the system, tank, or delivery piping indicates that a leak exists.</p> <p>(NOTE: Further investigation is not required if the test results for the system, tank, and delivery piping do not indicate that a leak exists but environmental contamination is the basis for suspecting a release.)</p> <p>Verify that the installation conducts a site check if the test results for the system, tank, and delivery piping do not indicate that a leak exists but environmental contamination is the basis for suspecting a release.</p> <p>Verify that a site check consists of measuring for the presence of a release where contamination is most likely to be present at the UST site.</p> <p>Verify that, if the test results for the excavation zone or the UST site indicate that a release has occurred, the installation begins corrective action.</p> <p>(NOTE: If the test results for the excavation zone or the UST site do not indicate that a release has occurred, further investigation is not required.)</p>
<p>6-30. The installation must contain, cleanup, report, and perform corrective action in response to a spill or overfill (DHEC 280.52).</p>	<p>Verify that the installation contains and immediately cleans up a spill or overfill, reports to the Department within 72 h, and begins corrective action in the following cases:</p> <ul style="list-style-type: none"> - a spill or overfill of petroleum resulting in a release to the environment that exceeds 25 gal or causes a sheen on nearby surfaces - a spill or overfill of a hazardous substance resulting in a release to the environment that equals or exceeds its reportable quantity under <i>CERCLA</i>. <p>Verify that the installation contains and immediately cleans up a spill or overfill of petroleum which is less than 25 gal and a spill or overfill of a hazardous substance is less than the reportable quantity.</p> <p>Verify that, if cleanup cannot be accomplished within 72 h, the installation immediately notifies the Department.</p>

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE I (RCRA-I)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>RELEASE RESPONSE AND CORRECTIVE ACTION</p> <p>6-31. Installations with UST systems containing petroleum or hazardous substances must respond to releases and conduct corrective action according to specific requirements (DHEC 280.60).</p> <p>6-32. Installations must perform initial abatement measures and site checks (DHEC 280.62).</p>	<p>(NOTE: Partially exempt UST systems must comply with these requirements, but UST systems subject to RCRA Subtitle C, <i>Corrective Action Requirements</i>, are exempt from these requirements.)</p> <p>Verify that, upon confirmation of a release, the installation performs the following initial response actions within 72 h of a release:</p> <ul style="list-style-type: none"> - reports the release to the Department - takes immediate action to prevent any further release of the regulated substance into the environment - identifies and mitigates fire, explosion, and vapor hazards. <p>Verify that the installation removes as much of the regulated substance from the UST system as is necessary to prevent further release to the environment.</p> <p>Verify that the installation visually inspects any aboveground releases or exposed belowground releases and prevents further migration of the released substance into surrounding soils and groundwater.</p> <p>Verify that the installation continues to monitor and mitigate any additional fire and safety hazards posed by vapors or free product that have migrated from the UST excavation zone and entered into subsurface structures (such as sewers or basements).</p> <p>Verify that the installation remedies hazards posed by contaminated soils that are excavated or exposed as a result of release confirmation, site investigation, abatement, or corrective action activities.</p> <p>Verify that, if these remedies include treatment or disposal of soils, the installation complies with applicable state and local requirements.</p> <p>Verify that the installation measures for the presence of a release when contamination is most likely to be present at the UST site, unless the presence and source of the release have been confirmed in accordance with a site check required because of release investigation and confirmation or a closure site assessment.</p> <p>Verify that the installation investigates to determine the possible presence of free product, and begins free product removal as soon as practicable.</p> <p>Verify that within 20 days after release confirmation, the installation submits a report to the Department summarizing the initial abatement steps and any resulting information or data.</p>

COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE I (RCRA-I)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>6-33. Installations must perform initial site characterization according to specific requirements (DHEC 280.63).</p>	<p>Verify that the installation assembles information about the site and the nature of the release, including information gained while confirming the release or completing the initial abatement measures, including:</p> <ul style="list-style-type: none"> - data on the nature and estimated quantity of the release - data from available sources and/or site investigations concerning surrounding populations, water quality, use and approximate locations of wells potentially affected by the release, subsurface soil conditions, locations of sewers, climatological conditions, and land use - results of the site check - results of the free product investigations to be used by the installation to determine whether free product must be recovered. <p>Verify that, within 45 days of release confirmation, the installation submits the information collected to the Department.</p>
<p>6-34. Installations must perform free product removal according to specific procedures (DHEC 280.64).</p>	<p>Verify that, at sites where investigations indicate the presence of free product, the installation must remove free product to the maximum extent practicable as determined by the Department.</p> <p>Verify that the installation conducts free product removal in a manner that minimizes the spread of contamination into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site, and which properly treats, discharges or disposes of recovery byproducts in compliance with applicable local, state, and Federal regulations.</p> <p>Verify that the installation uses abatement of free product migration as a minimum objective for the design of the free product removal system.</p> <p>Verify that the installation handles any flammable products in a safe and competent manner to prevent fires and explosions.</p> <p>Verify that the installation submits to the Department a free product removal report which provides the following information, within 45 days after confirming a release:</p> <ul style="list-style-type: none"> - the name of the person(s) responsible for implementing the free product removal measures - the estimated quantity, types, and thickness of free product observed or measured in wells, boreholes, and excavations - whether any discharge will take place onsite or offsite during the recovery operation and where this discharge will be located - the type of treatment applied to, and the effluent quality expected from, any discharge - the steps that have been or are being taken to obtain necessary permits for any discharge - the disposition of the recovered free product.

COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I (RCRA-I) South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
6-35. Installations must investigate the extent of soil and groundwater contamination following a release (DHEC 280.65).	<p>Determine if any of the following conditions, which require an investigation, exist:</p> <ul style="list-style-type: none"> - evidence that groundwater wells have been affected by the release - free product is found to need recovery - evidence that contaminated soils may be in contact with groundwater. <p>Verify that the installation investigates the release, the release site, and the surrounding, possibly affected, area.</p> <p>Verify that the installation submits the information obtained from the investigation as soon as practicable.</p>
6-36. Corrective actions must be approved by the Department (DHEC 280.66 (c) and (d)).	<p>Verify that any corrective action by the installation is approved by the Department.</p>
OUT-OF-SERVICE UST SYSTEMS AND CLOSURE	
6-37. Temporarily closed UST systems must meet specific closure requirements (DHEC 280.80).	<p>Verify that, when a UST system is temporarily closed, the installation continues the following operations:</p> <ul style="list-style-type: none"> - operation and maintenance of corrosion protection - any release detection - release reporting, investigation, and confirmation - release response and corrective action for UST systems containing petroleum and hazardous substances. <p>(NOTE: Release detection is not required if the UST system is empty. The UST system is empty when all materials have been removed using commonly employed practices so no more than 2.5 cm of residue or 0.3 percent by weight of the total capacity of the UST system remain in the system.)</p> <p>Verify that, when a UST system is temporarily closed for 3 mo or more, vent lines are left open and functioning and all other lines, pumps, manways, and ancillary equipment are capped and secured.</p> <p>Verify that, when a UST system is temporarily closed for more than 12 mo and the UST system does not meet either performance standards for new UST systems or the upgrading requirements, the installation permanently closes the UST system.</p>

**COMPLIANCE CATEGORY:
RESOURCE CONSERVATION AND RECOVERY ACT,
SUBTITLE I (RCRA-I)
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
6-37. (continued)	Verify that the installation permanently closes substandard UST systems at the end of this 12-mo period, unless the Department provides an extension of the 12-mo temporary closure period.
6-38. Permanent closure and changes in service must meet notification and operational requirements (DHEC 280.71).	<p>Verify that, at least 30 days before beginning either permanent closure or a change in service, the installation notifies the Department of its intent to permanently close or make the change in service, unless this action is in response to corrective action.</p> <p>Verify that, to permanently close a UST, the installation empties and cleans the UST by removing all liquids and accumulated sludges.</p> <p>Verify that all USTs taken out of service permanently are either removed from the ground or filled with an inert solid material.</p> <p>(NOTE: Continued use of a UST system to store a nonregulated substance is considered a change in service.)</p> <p>Verify that, before a change in service, the installation empties and cleans the UST by removing all liquid and accumulated sludge and conducts a site assessment.</p>
6-39. The installation must perform a site assessment at change in ownership, closure, or change in service (DHEC 280.72).	<p>Verify that, before permanent change in ownership, closure or a change in service is completed, either the installation measures for the presence of a release when contamination is most likely to be present at the UST site or vapor monitoring or groundwater monitoring is operating at the time of closure and indicates no release has occurred.</p> <p>Verify that, if contaminated soils, contaminated groundwater, or free product as a liquid or vapor is discovered, the installation begins corrective action.</p>
6-40. Installations must maintain closure records (DHEC 280.74).	<p>Verify that the installation maintains records that are capable of demonstrating compliance with the closure requirements.</p> <p>Verify that the installation maintains records of the excavation zone assessment for 3 yr after completion of permanent closure or change in service in one of the following ways:</p> <ul style="list-style-type: none"> - by the installation that took the UST system out of service - by the current owners and operators of the UST system site - by mailing records to the Department if they cannot be maintained at the closed facility.

INSTALLATION:	COMPLIANCE CATEGORY: RESOURCE CONSERVATION AND RECOVERY ACT, SUBTITLE I (RCRA-I) South Carolina Supplement	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

SECTION 7

**COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION,
AND LIABILITY ACT/ SUPERFUND AMENDMENTS AND
REAUTHORIZATION ACT (CERCLA/SARA)
AND RCRA CORRECTIVE ACTIONS**

South Carolina Supplement

SECTION 7

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT/SUPERFUND AMENDMENT AND REAUTHORIZATION ACT (CERCLA/SARA) AND RCRA CORRECTIVE ACTIONS South Carolina Supplement

Regulations promulgated under the authority of *CERCLA/SARA* are applicable to installations in South Carolina. South Carolina regulations under several protocols require release reporting. Refer to the U.S. ECAS Manual for Federal, Army, and DOD requirements.

INSTALLATION:	COMPLIANCE CATEGORY: COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT/ SUPER- FUND AMENDMENTS AND REAUTHORIZATION ACT AND RCRA CORRECTIVE ACTIONS South Carolina Supplement	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

SECTION 8

TOXIC SUBSTANCES CONTROL ACT (TSCA)

South Carolina Supplement

SECTION 8

TOXIC SUBSTANCES CONTROL ACT (TSCA) South Carolina Supplement

South Carolina regulates polychlorinated biphenyl (PCB) concentrations in water and the placement of PCBs in solid waste disposal facilities. Also, see the U.S. ECAS Manual for Federal, Army, and DOD requirements.

INSTALLATION:	COMPLIANCE CATEGORY: TOXIC SUBSTANCES CONTROL ACT (TSCA) South Carolina Supplement	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

SECTION 9

FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA)

South Carolina Supplement

SECTION 9

FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) South Carolina Supplement

Definitions

The following definitions are taken from the *South Carolina Pesticide Control Act*, the Code of Laws of South Carolina (CLSC), 1976, Title 46, *Agriculture*, Chapter 13 *Pesticide Control Act* (CLSC 46-13-20), the *Rules and Regulations for the Enforcement of the South Carolina Pesticide Control Act* (RR 27-1075), and the 1991 *Agricultural Chemicals Handbook* from Clemson University.

- **Active Ingredient** -
 1. in the case of a pesticide other than a plant regulator, defoliant, or desiccant, an ingredient that will prevent, destroy, repel, or mitigate any pest
 2. in the case of a plant regulator, an ingredient that, through physiological action, will accelerate or retard the rate of growth or rate of maturation or otherwise alter the behavior of plants or the product of the plants
 3. in the case of a defoliant, an ingredient that will cause the revisor foliage to drop from a plant
 4. in the case of a desiccant, an ingredient that will artificially accelerate the drying of plant tissue.
- **Administrator** - the Administrator of the U.S. Environmental Protection Agency (USEPA).
- **Defoliant** - any substance or mixture of substances intended for causing the leaves or foliage to drop from a plant, with or without causing abscission.
- **Department of Fertilizer and Pesticide Control** - a department within the Division of Regulatory and Public Service Programs, Clemson University.
- **Desiccant** - any substance or mixture of substances intended for artificially accelerating the drying of plant tissue.
- **Device** - any instrument or contrivance containing or integrally associated with a pesticide, but not including equipment used for the application of pesticides when sold separately.
- **Director** - the Director of the Division of Regulatory and Public Service Programs, College of Agricultural Sciences, Clemson University.
- **Equipment** - any type of ground, water, or aerial equipment or contrivance using motorized, mechanical, or pressurized power and used to apply any pesticide on land and anything that may be growing, habitating, or stored on or in the land, but does not include any pressurized hand-sized household apparatus used to apply any pesticide or any equipment or contrivance for which the person who is applying the pesticide is the source of power or energy in making the pesticide application.
- **Fungus** - all nonchlorophyll-bearing thallophyte (that is, any nonchlorophyll-bearing plant of a lower order than mosses and liverworts), for example, rust, smut mildew, mold, yeast, and bacteria, except those on or in living man or other living animals, and except those on or in processed food, beverages, or pharmaceuticals.

- ***Insect*** - any of the numerous small invertebrate animals generally having the body more or less obviously segmented, for the most part belonging to the Class Insecta.
- ***Label*** - the written, printed or graphic matter on, or attached to, the pesticide or device or any of its containers or wrappers.
- ***Labeling*** - all labels and all other written, printed, or graphic matter:
 1. accompanying the pesticide or device at any time
 2. to which reference is made on the label or in literature accompanying the pesticide or device, except to current official publications of the USEPA, the U.S. Departments of Agriculture and Interior, the Department of Health, Education and Welfare, state experimental stations, state agricultural colleges, and similar Federal or state institutions or agencies authorized by law to conduct research in the field of pesticides.
- ***Nematode*** - invertebrate animals of the Phylum Nematelminthes and Class Nematoda, that is, unsegmented round worms with elongated, fusiform, or sac-like bodies covered with cuticle, and inhabiting soil, water, plants, or plant parts; may also be called nemas or eelworms.
- ***Noncommercial Applicator*** - a person (including officials or employees of Federal, state or local government) who uses or supervises the use of any restricted-use pesticide.
- ***Person*** - any individual, partnership, association, fiduciary, corporation, or any organized group of persons whether incorporated or not.
- ***Pest*** - any insect, snail, slug, rodent, nematode, fungus, weed, and any other form of terrestrial or aquatic plant or animal life or virus, bacteria, or other microorganism (except viruses, bacteria, or other microorganisms on or in living man or other living animals) that the Director declares to be a pest.
- ***Pesticide*** - any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest and any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.
- ***Plant Regulator*** - any substance or mixture of substances intended, through physiological action, for accelerating or retarding the rate of growth or rate of maturation, or for otherwise altering the behavior of plants or their produce, but does not include substances to the extent that they are intended as plant nutrients, trace elements, nutritional chemicals, plant inoculants, and soil amendments. Excludes nutritional mixtures or soil amendments known as vitamin-hormone horticultural products, intended for improvement, maintenance, survival, health, and propagation of plants, and as are not for pest destruction and are nontoxic, nonpoisonous in the undiluted packaged concentration.
- ***Restricted-Use Pesticides*** - any pesticide or pesticide use classified for restricted use by the Administrator or the Director, including chlordane, aldrin, endrin, heptachlor, and dieldrin.
- ***Weed*** - any plant that grows where not wanted.

FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA)
GUIDANCE FOR SOUTH CAROLINA CHECKLIST USERS

APPLICABILITY:	REFER TO CHECKLIST ITEMS:
Restricted-Use Pesticide Licensing	9-1
Restricted-Use Pesticide Records	9-2
Pesticide Use	9-3
Storage and Disposal	9-4 and 9-5
Experimental-Use Pesticide Permits	9-6

COMPLIANCE CATEGORY:
FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>RESTRICTED-USE PESTICIDE LICENSING</p> <p>9-1. Personnel who apply restricted-use pesticides must be licensed (CLSC 46-13-60(2)(d), (3)(a), 46-13-90(1)I-K, 46-13-140; RR 27-1079.C, 27-1080).</p> <p>RESTRICTED-USE PESTICIDE RECORDS</p> <p>9-2. Records of the use of restricted-use pesticides must be maintained (CLSC 46-13-90(1)G and H; RR 27-1083.C.1 through 3).</p> <p>PESTICIDE USE</p> <p>9-3. Pesticides must be safely and properly used (CLSC 46-13-90(1)B through E, L through N, and P; RR 27-1084.A.1 and 2).</p>	<p>Verify that all personnel who apply restricted-use pesticides are licensed in the applicable categories.</p> <p>(NOTE: Doctors and veterinarians are exempt from this licensing requirement when they apply pesticides in the normal course of their professional duties.)</p> <p>Verify that personnel comply with any limitations or restrictions on or in a license or certificate.</p> <p>Verify that records are maintained of all applications of restricted-use pesticides, including the following:</p> <ul style="list-style-type: none"> - the quantity of each pesticide used - the chemical or common name of the active pesticidal ingredient(s) (not the product name) - the pest or purpose for which the pesticide was applied - the date and place of application. <p>(NOTE: It is not necessary to list the pests involved for general household insect control or for general insect control measures in commercial and industrial establishments.)</p> <p>Verify that the records for restricted-use pesticides are maintained for 2 yr.</p> <p>Verify that personnel do not engage in the following activities:</p> <ul style="list-style-type: none"> - apply, mix, load, store, or dispose of a pesticide inconsistent with its labeling of the USEPA or the state registration - make false or fraudulent records, invoices, or reports - apply known ineffective or improper materials - knowingly operate faulty or unsafe equipment - make application of pesticides in a grossly negligent manner - allow their license or certificate to be used by another person

COMPLIANCE CATEGORY:
FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>9-3. (continued)</p>	<ul style="list-style-type: none"> - knowingly make false or misleading statements during or after an inspection concerning any infestation or infection of pests found on land - use a pesticide under an experimental-use permit contrary to the requirements of the permit.
<p>STORAGE AND DISPOSAL</p> <p>9-4. Good management practices are recommended for pesticide storage (1991 Agricultural Chemical Handbook from Clemson University).</p> <p>9-5. Good management practices are recommended for pesticide disposal (1991 Agricultural Chemical Handbook from Clemson University and RR 27-1073.B).</p>	<p>Verify that pesticides are placed where they will not contaminate feed, fertilizers, or any kind of food.</p> <p>Verify that pesticides are stored in a locked building.</p> <p>Verify that herbicides are kept in a separate building from other pesticides.</p> <p>Verify that storage rooms are labeled with DANGER signs.</p> <p>Verify that pesticides are kept in the original containers with the labels intact.</p> <p>Verify that liquid concentrates are stored to avoid fire hazard.</p> <p>(NOTE: Disposal of small quantities of unused household pesticides and containers may be in the manner of other wastes. No special precautions beyond the label directions are required.)</p> <p>Verify that disposal of all unused pesticides are handled on a case-by-case basis by Department of Health and Environmental Control (DHEC).</p> <p>Verify that all unused pesticides registered and unregistered for sale in South Carolina are treated as hazardous wastes when they are disposed.</p> <p>Verify that all pesticide containers are triple-rinsed.</p> <p>Verify that all metal and glass containers not recycled are punctured or crushed, respectively.</p> <p>Verify that paper or fibrous containers are tapped to dislodge any loose pesticide and the container's bags are rinsed.</p>

COMPLIANCE CATEGORY:
FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA)
South Carolina Supplement

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>9-5. (continued)</p> <p>EXPERIMENTAL- USE PESTICIDE PERMITS</p> <p>9-6. Personnel who hold Federal experimental-use permits must notify the Director (RR 27-1071.B).</p>	<p>Verify that triple rinsing for metal, plastic, or glass pesticide containers consists of the following:</p> <ul style="list-style-type: none"> - letting the empty pesticide containers drain into the spray tank 30 s after drops commence - filling the container at least 10 percent full of water or other rinsate - upending or rolling to rinse all sides - draining into spray tank for 30 s after drops commence - repeating this procedure for a total of three times. <p>Verify that personnel who hold Federal experimental-use permits for experiments in the state notify the Director regarding the pesticides to be used and the locations within the state where the product will be used.</p>

INSTALLATION: 	COMPLIANCE CATEGORY: FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (FIFRA) South Carolina Supplement	DATE: 	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

SECTION 10

**NATIONAL HISTORIC PRESERVATION ACT (NHPA)
AND CULTURAL RESOURCES**

South Carolina Supplement

SECTION 10

NATIONAL HISTORIC PRESERVATION ACT (NHPA) AND CULTURAL RESOURCES South Carolina Supplement

Definitions

These definitions were obtained from Title 60, *Code of Laws of South Carolina*, Chapter 12, Section 60-12-10 and the *South Carolina Underwater Antiquities Act of 1991*.

- *Adverse Effect* - an effect on a historic property, including alteration, destruction, or demolition, that diminishes the property's historic integrity.
- *Artifact* - any object or assemblage of objects found in an archaeological context that yields or is likely to yield information of significance to the scientific study of human prehistory, history, or culture and which have remained unclaimed for more than 50 yr.
- *Building* - a construction created to shelter any form of human activity, including a house, barn, church, or hotel.
- *Department* - the Department of Archives and History.
- *Institute* - the South Carolina Institute of Archaeology and Anthropology.
- *National Register* - the National Register of Historic Places.
- *Paleontological Property* - paleontological (fossil) material or any site that contains paleontological material.
- *Submerged* - beneath or substantially beneath the territorial waters of the state or submerged at mean low tide.
- *Submerged Archaeological Historic Property* - any site, vessel, structure, object, or remains that:
 1. yields or is likely to yield information of significance to scientific study of human prehistory, history, or culture
 2. is embedded in or on submerged lands and has remained unclaimed for 50 yr or longer
 3. is included in, or is eligible for, listing in the National Register.

**NATIONAL HISTORIC PRESERVATION ACT (NHPA)
AND CULTURAL RESOURCES
GUIDANCE FOR SOUTH CAROLINA CHECKLIST USERS**

APPLICABILITY:

All Installations

**REFER TO
CHECKLIST ITEMS:**

10-1 through 10-3

**COMPLIANCE CATEGORY:
NATIONAL HISTORIC PRESERVATION ACT (NHPA)
AND CULTURAL RESOURCES
South Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
<p>ALL INSTALLATIONS</p> <p>10-1. Installations are required to consult the Department prior to any undertaking that may adversely affect property listed on the Historic Register (SC Title 60, Chapter 12, Section 60-12-30).</p> <p>10-2. Chance discoveries of burial material must be reported to the State Archaeologist (SC Institute of Archaeology and Anthropology Policy on Human Burial Remains).</p> <p>10-3. Submerged archaeological historic property or paleontological property must not be disturbed without a license (<i>SC Underwater Antiquities Act of 1991</i> Section 54-7-650).</p>	<p>Determine that the installation has properties which are eligible for listing or are listed on the National Register of Historic Places.</p> <p>Verify that, when planning projects which may adversely affect properties eligible for or listed on the National Register, the installation consults with the Department to minimize the adverse effects on the property.</p> <p>Verify that any chance or intentional discoveries of human remains or burial materials is reported to the Deputy State Archaeologist.</p> <p>Verify that the removal of artifacts or human remains from a discovered burial site is prohibited.</p> <p>Verify that activity at the site of the discovery is suspended until permitted by the State Archaeologist.</p> <p>Verify that persons desiring to remove, displace, or destroy submerged archaeological or historic property or paleontological property first obtain a license from the Institute of Archaeology and Anthropology.</p> <p>(NOTE: A license is not required to inspect, study, explore, photograph, or otherwise use and enjoy such property as long as the activity does not involve excavation or substantive injury or disturbance of the site or its environment, endanger other persons or property, or violate other laws.)</p>

INSTALLATION:	COMPLIANCE CATEGORY: NATIONAL HISTORIC PRESERVATION ACT (NHPA) AND CULTURAL RESOURCES South Carolina Supplement	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

SECTION 11

NATURAL RESOURCES MANAGEMENT

South Carolina Supplement

SECTION 11

NATURAL RESOURCES MANAGEMENT South Carolina Supplement

Definitions

These definitions were obtained from the following: South Carolina Coastal Council (SCCC), *Rules and Regulations for Permitting in the Critical Areas of the Coastal Zone*, Regulation 30-1(C); *South Carolina Nongame and Endangered Species Conservation Act*, Section 50-15-20; *Land Resources Conservation Commission*, Chapter 72, Regulation 72-105 and 72-301.

- *Coastal Waters* - the navigable waters of the United States subject to the ebb and flood of the tide and which are saline waters, shoreward to their mean high-water mark.
- *Coastal Zone* - all coastal waters and submerged lands seaward to the state's jurisdictional limits and all lands and waters in the counties of the state which contain any one or more of the critical areas. These counties are Beaufort, Berkeley, Charleston, Colleton, Dorchester, Horry, Jasper, and Georgetown.
- *Critical Areas* - any one of the following: coastal waters, tidelands, beach/dune systems.
- *Dam* - any artificial barrier, together with appurtenant works, including but not limited to dams, levees, dikes, or floodwalls for the impoundment or diversion of water or other fluids where failure may cause danger to life or property.
- *Emergency Orders* - orders issued by an appointed official of a county or municipality or of the state acting to protect the public health and safety, upon written notification to the Coastal Council. However, with regard to the beach/dune critical area, only the use of sand bags, sand scraping, or renourishment, or a combination of them, is allowed pursuant to emergency orders.
- *Endangered Species* - The term includes any species or subspecies of fish or wildlife appearing on the United States' List of Endangered Native Fish and Wildlife as well as any species or subspecies of fish and wildlife appearing the United States' List of Endangered Foreign Fish and Wildlife. In addition it includes any species or subspecies of wildlife whose prospects of survival or recruitment within the state are in jeopardy or are likely within the foreseeable future to become so due to any of the following factors:
 1. the destruction, drastic modification, or severe curtailment of its habitat
 2. its over utilization for scientific, commercial or sporting purposes
 3. the effect on the species of disease, pollution, or predation
 4. other natural or manmade factors affecting the species' prospects of survival or recruitment within the state
 5. any combination of the foregoing factors.
- *Erosion Control Structures and Beach Nourishment* -
 1. *Seawall* - a special type of retaining wall that is specifically designed to withstand wave forces.
 2. *Bulkhead* - a retaining wall designed to retain fill material but not to withstand wave forces on an exposed shoreline.

3. *Revetment* - a sloping structure built along an escarpment or in front of a bulkhead to protect the shoreline or bulkhead from erosion.
 4. *Minor Development Activity* - the construction, maintenance, repair or alteration of any private pier or erosion control structure, the construction of which does not involve dredging.
 5. *Beach Nourishment* - the artificial establishment and periodic renourishment of a beach with sand that is compatible with the beach in such a way as to create a dry sand beach at all stages of the tide.
- *Land Disturbing Activity* - any use of the land by any person that results in a change in the natural cover or topography which may cause erosion and contribute to sediment and alter the quality and quantity of stormwater runoff.
 - *Marinas* - a marina is any of the following:
 1. locked harbor facility
 2. any facility that provides fueling, pump-out maintenance, or repair services (regardless of length)
 3. any facility that has permanent docking space of greater than 200 ft.
 - *Normal Maintenance and Repair* - work performed on any structure within the critical area as part of a routine and ongoing program to maintain the integrity of the structure provided that the structure is still generally intact and functional in its present condition and the work only extends to the original dimensions of the structure.
 - *Tidelands* - all areas at or below mean high tide and coastal wetlands, mudflats, and similar areas contiguous or adjacent to coastal waters and are an integral part of the estuarine systems involved. Coastal wetlands include marshes, mudflats, and shallows and means those areas periodically inundated by saline waters whether or not the saline waters reach the area naturally or through artificial water courses and those areas normally characterized by the prevalence of saline water vegetation capable of growth and reproduction. Tidelands does not apply to wetland areas that are not an integral part of an estuarine system.

**NATURAL RESOURCES MANAGEMENT
GUIDANCE FOR SOUTH CAROLINA CHECKLIST USERS**

APPLICABILITY:	REFER TO CHECKLIST ITEMS:
Coastal Areas	11-1 and 11-2
Dams	11-3
Stormwater Management	11-4
Endangered and Threatened Species	11-5

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
COASTAL AREAS 11-1. Installations that alter a critical area must have a valid permit from the Coastal Council (SCCC, Regulation 30-2(B) and 30-5(A)).	<p>Determine if the installation conducts any of the following activities in a critical area that is exempt from obtaining a permit:</p> <ul style="list-style-type: none"> - the accomplishment of emergency orders of an appointed official of a county or municipality or of the state acting to protect the public health and safety upon written notification to the Coastal Council - hunting, erecting duckblinds, fishing, shellfishing, and trapping when and where otherwise permitted - the conservation, replenishment, and research activities of state agencies and educational institutions - boating or other recreation provided that flora, fauna, or the physical or aesthetic resources of the area are not harmed - the discharge of treated effluent - dredge and fill performed by the U. S. Corps of Engineers (USACE) for the maintenance of harbor channels and the collection and disposal of the materials dredged - the construction of walkways over sand dunes - emergency repairs to an existing bank, dike, fishing pier, or structure other than oceanfront erosion control structures or devices - maintenance and repair of drainage and sewer facilities or any utility or railroad - normal maintenance or repair to any pier or walkway provided that it does not involve dredge or fill - construction or maintenance of a major utility facility - habitable structures and pools determined to be damaged less than 66.66 percent, with approval from the Coastal Council - erosion control structures or devices determined to be damaged less than 80 percent above grade, with approval from the Coastal Council. <p>Verify that installations which conduct nonexempt activities in critical areas have a valid permit from the Coastal Council.</p>
11-2. Installations with emergency orders for activities that require a permit must meet Council notification standards (SCCC, Regulation 30-5(B) and (C)).	<p>Verify that installations with emergency orders for activities that require a permit notify the Coastal Council in writing prior to beginning the activity.</p> <p>Verify that the notification includes the following:</p> <ul style="list-style-type: none"> - the nature of the emergency order - the substance of the emergency order - the time the order will be issued or when the order was issued - the name of the local official executing the order and the authority under which that person was acting - the location of the activity ordered - the estimate of when such orders will be withdrawn.

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
11-2. (continued)	<p>Verify that the Coastal Council is notified within 72 h of the issuance of the emergency action taken.</p> <p>Verify that installations which conduct emergency repairs to any existing bank, dike, or fishing pier notify the Coastal Council by telephone, telegram, or radio within 72 h from the onset of needed repairs and in writing within 5 days after the commencement of repairs.</p>
DAMS	
11-3. Installations that construct a new dam or repair, alter, or remove an existing dam must have a valid permit (Land Resources Conservation Commission, Chapter 72, Regulation 72-115).	<p>Verify that installations which construct a new dam or repair, alter, or remove an existing dam have written approval from the Commission.</p> <p>Verify that installations do not construct a new dam prior to obtaining a valid permit to construct from the Commission.</p> <p>Verify that installations which repair, remove, or alter existing dams have received a valid permit from the Commission prior to conducting the activities.</p>
STORMWATER MANAGEMENT	
11-4. Installations that undertake land disturbing activities must have an approved stormwater management and sediment control plan (Land Resources Conservation Commission, Chapter 72, Regulation 72-302 and 72-305).	<p>Determine if the installation conducts any of the following land disturbing activities that are exempt from requiring a stormwater management and sediment control plan:</p> <ul style="list-style-type: none"> - activities on agricultural land for production of plants and animals useful to humans - activities undertaken on forest land for the production and harvesting of timber and timber products - construction or improvement of single family residences or their accessory buildings that are separately built and not part of multiple construction in a subdivision development - activities permitted under another state or Federal regulation - activities undertaken to provide gas, electrification, or communications services subject to the jurisdiction of the South Carolina Public Service Commission - activities related to the routine maintenance and/or repair or rebuilding of the tracks, rights-of-way, bridges, communication facilities, and other related structures and facilities of a railroad company. <p>Verify that installations which conduct land disturbing activities not exempt have an approved stormwater management and sediment control plan.</p>

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
11-4. (continued)	(NOTE: Land disturbing activities involving 2 acres or less of actual land disturbance that are not part of a larger common plan of development or sale must submit a stormwater management and sediment control plan. Approval is not required for this plan.)
THREATENED AND ENDANGERED SPECIES	
11-5. Installations must not take, possess, transport, export, process, sell or offer for sale, or ship endangered species (<i>South Carolina Nongame and Endangered Species Conservation Act, Section 50-15-30</i>).	Determine if the installation has any of the endangered or threatened species listed in Appendix 11-1 or 11-2. Verify that no endangered or threatened species are taken, possessed, transported, exported, processed, sold or offered for sale, or shipped.

Appendix 11 - 1

South Carolina Threatened and Endangered Animal Species

(Source: The Heritage Trust, Elements of Concern: Animals)

Status	Common Name	Scientific Name
E	Shortnose sturgeon	<i>Acipenser brevirostrum</i>
T	American alligator	<i>Alligator mississippiensis</i>
E	Flatwoods salamander	<i>Ambystoma cingulatum</i>
T	Loggerhead turtle	<i>Caretta caretta</i>
T	Bog turtle	<i>Clemmys muhlenbergii</i>
E	American swallow-tailed kite	<i>Elanoides forficatus</i>
T	Carolina darter	<i>Etheostoma collis collis</i>
T	Southern coal skink	<i>Eumeces anthracinus pluvialis</i>
E	Eastern cougar	<i>Felis concolor cougar</i>
E	Gopher tortoise	<i>Gopherus polyphemus</i>
E	Bald eagle	<i>Haliaeetus leucocephalus</i>
T	Pin barrens treefrog	<i>Hyla andersonii</i>
E	Wood stork	<i>Mycteria americana</i>
T	Small-footed bat	<i>Myotis Leibii</i>
E	Red-cockaded woodpecker	<i>Picoides borealis</i>
E	Rafinesque's big-eared bat	<i>Plecotus Rafinesquii</i>
E	Webster's salamander	<i>Plethodon websteri</i>
T	Broad-striped dwarf siren	<i>Pseudobranchius striatus striatus</i>
T	Sandhills chub	<i>Semotilus lumbee</i>
E	Bachman's warbler	<i>Vermivora bachmanii</i>

E = endangered

T = threatened

Appendix 11 - 2

South Carolina Threatened and Endangered Plant Species

(Source: The Heritage Trust, Elements of Concern: Plants)

Status	Common Name	Scientific Name
E	Black-spored quillwort	<i>Isoetes melanospora</i>
E	Small whorled pogonia	<i>Isotria medeoloides</i>
E	n.a.	<i>Sisyrinchium dichotomum</i>
E	Persistent trillium	<i>Trillium persistens</i>
E	Relict trillium	<i>Trillium reliquum</i>
E	Schweinitz's sunflower	<i>Helianthus schweinitzii</i>
T	Dwarf-flowered heartleaf	<i>Hexastylis naniflora</i>
E	Pondberry	<i>Lindera melissifolia</i>
E	Rough-leaved loosestrife	<i>Lysimachia asperulifolia</i>
E	Canby's dropwort	<i>Oxypolis canbyi</i>
E	Harperella	<i>Ptilimnium nosdosum</i>
E	Michaux's sumac	<i>Rhus michauxii</i>
E	Miccosukee gooseberry	<i>Ribes echinellum</i>
E	Mountain sweet pitcher-plant	<i>Sarracenia rubra</i> ssp. <i>jonesii</i>
E	Chaffseed	<i>Schwalbea americana</i>

E = endangered

T = threatened

INSTALLATION:	COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT South Carolina Supplement	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

SECTION 12

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

South Carolina Supplement

SECTION 12

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) South Carolina Supplement

Regulations promulgated under the authority of 40 CFR are applicable to installations in South Carolina. Refer to the U.S. ECAS Manual for Federal, Army, and DOD requirements.

INSTALLATION:	COMPLIANCE CATEGORY: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) South Carolina Supplement	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

SECTION 13

ASBESTOS MANAGEMENT PROGRAM

See also the Supplement

SECTION 13

ASBESTOS MANAGEMENT PROGRAM South Carolina Supplement

Disposal of asbestos is regulated under South Carolina solid waste regulations. Other aspects of asbestos management are governed by Federal regulations. Refer to the U.S. ECAS Manual for Federal, Army, and DOD requirements.

INSTALLATION:	COMPLIANCE CATEGORY: ASBESTOS MANAGEMENT PROGRAM South Carolina Supplement	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

SECTION 14

NOISE ABATEMENT

South Carolina Supplement

SECTION 14

NOISE ABATEMENT South Carolina Supplement

The motor vehicle requirements of this protocol are taken from Title 56, Chapter 5, *Traffic Regulations*, Department of Highways and Public Transportation, Motor Vehicle Division, Section 56-5-5020, of the Code of Laws of South Carolina. There are no statewide regulations for airplane or airport noise control.

NOISE ABATEMENT
GUIDANCE FOR SOUTH CAROLINA CHECKLIST USERS

APPLICABILITY:

Motor Vehicles

**REFER TO
CHECKLIST ITEMS:**

14-1

**COMPLIANCE CATEGORY:
NOISE ABATEMENT
South Carolina Supplement**

**REGULATORY
REQUIREMENTS:**

REVIEWER CHECKS:

MOTOR VEHICLES

14-1. Motor vehicles must be equipped with specific noise abatement equipment (South Carolina Traffic Regulation 56-5-5020).

Verify that motor vehicles are equipped with a muffler in good working order and in constant operation to prevent excessive or unusual noise and annoying smoke.

Verify that no muffler cutouts, bypasses, or similar devices are used on a motor vehicle used on a highway.

INSTALLATION:	COMPLIANCE CATEGORY: NOISE ABATEMENT South Carolina Supplement	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		



SECTION 15

RADON PROGRAM

South Carolina Supplement

SECTION 15

RADON PROGRAM South Carolina Supplement

South Carolina has no requirements concerning radon. Refer to the U.S. ECAS Manual for Army and DOD requirements.

INSTALLATION:	COMPLIANCE CATEGORY: RADON PROGRAM South Carolina Supplement	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

SECTION 16

ENVIRONMENTAL PROGRAM MANAGEMENT (EPM)

South Carolina Supplement

SECTION 16

ENVIRONMENTAL PROGRAM MANAGEMENT (EPM) South Carolina Supplement

This protocol has no specific, applicable state regulations. Refer to the U.S. ECAS Manual for Army requirements.

INSTALLATION:	COMPLIANCE CATEGORY: ENVIRONMENTAL PROGRAM MANAGEMENT (EPM) South Carolina Supplement	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		

SECTION 17

HAZARDOUS MATERIALS MANAGEMENT

South Carolina Supplement

SECTION 17

HAZARDOUS MATERIALS MANAGEMENT South Carolina Supplement

The following have been adopted by reference:

- the National Fire Protection Association (NFPA) Pamphlet No. 30, 1987 Edition, and all referenced publications in this pamphlet
- the NFPA Pamphlet No. 30A, 1987 Edition, and all referenced publications in this pamphlet except for the aboveground storage of flammable and combustible liquids at service stations
- Title 49 of the Code of Federal Regulations (CFR) 383, 390 through 399, and 171 through 179 as they relate to commercial vehicle safety including hazardous material transportation.

**HAZARDOUS MATERIALS MANAGEMENT
GUIDANCE FOR SOUTH CAROLINA CHECKLIST USERS**

APPLICABILITY:	REFER TO CHECKLIST ITEMS:
Aboveground Storage Tanks (ASTs)	17-1 through 17-5

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
ABOVEGROUND STORAGE TANKS (ASTs) 17-1. The aboveground storage of flammable and combustible liquids must meet specific tank design requirements (Code of Laws of South Carolina (CLSC), Section 39-41-260 (A), (B), (D), (I), (J), and (P)). 17-2. The aboveground storage of flammable and combustible liquids must meet specific site design requirements (CLSC 39-41-260 (C) and (D)).	<p>(NOTE: Service stations with an AST in excess of 12,000 gal liquid capacity on 12 June 1990 are exempt from all service station requirements.)</p> <p>Determine if the installation stores, handles, or uses flammable or combustible liquids.</p> <p>Verify that the installation does not store more than 32,000 gal aggregate capacity of flammable or combustible liquids, or both, aboveground at service stations.</p> <p>Verify that no single storage tank exceeds 12,000 gal capacity.</p> <p>Verify that service stations with 12,000 gal aggregate storage capacity do not have a storage tank in excess of 4000 gal liquid capacity.</p> <p>Verify that all horizontal tanks located at service stations are installed on steel supports welded to the tank and not to exceed 6 in. in height or are placed on concrete support cradles.</p> <p>Verify that all vertical tanks are installed on gravel with a minimum of 6 in. of reinforced concrete footing.</p> <p>Verify that all footing is larger than the diameter of the tank.</p> <p>(NOTE: Two single portable tanks of 660 gal capacity or less of Class II or Class III combustible liquid are allowed at service stations and are exempt from the these requirements.)</p> <p>Verify that all ASTs at service stations are enclosed by an 8 ft high industrial type chain link fence with barbed wire barricade with a minimum of two means of emergency access located at opposite ends of the enclosure.</p> <p>Verify that each access is at least 36 in. wide and is locked at all times, except when entering or exiting.</p> <p>Verify that there is a minimum working distance of at least 5 ft between the tank and the fence.</p> <p>(NOTE: Service stations existing on 12 June 1990 with ASTs that are enclosed with a fence constructed are allowed to continue operating with a substandard working distance between the tanks and the fence.)</p>

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
17-2. (continued)	<p>Verify that all ASTs located at service stations with 30,000 gal aggregate storage capacity are located at least 50 ft from a dispenser, at least 50 ft from the nearest side of a public way, and at least 100 ft from a property line that is or can be built upon, including the opposite side of a public way.</p> <p>Verify that all ASTs located at service stations with 12,000 gal aggregate storage capacity are located at least 37 ft from a dispenser, at least 37 ft from the nearest side of a public way, and at least 40 ft from a property line that is or can be built upon including the opposite side of a public way.</p>
17-3. The aboveground storage of flammable and combustible liquids must meet specific piping and valve requirements (CLSC 39-41-260 (G), (H), and (L) through (O)).	<p>Verify that all feeder lines from ASTs to dispensers located at service stations are located underground and are covered with at least 3 ft of earth cover or 18 in. of well tamped earth cover plus 6 in. of reinforced concrete or 8 in. of asphaltic concrete.</p> <p>Verify that piping is equipped with a 52 valve that cuts off the flow of liquid when the dispensing pump is not operating, as well as a quick shut-off device at the tank that will shut off the flow of product.</p> <p>Verify that a means is provided to enable determination of liquid level in ASTs located at service stations without requiring a person to climb atop the tank.</p> <p>Verify that provisions are made to either automatically shut off fuel delivery into the AST when the liquid level in the tank reaches 95 percent of capacity or to sound an audible alarm.</p> <p>(NOTE: The liquid level determination and automatic fuel shut off requirements do not apply to horizontal tanks of 4000 gal or less and vertical tanks of 2000 gal or less that must be filled with a hand-held hose.)</p> <p>Verify that regardless of whether a suction or submersible pump system is used, a listed emergency shut-off valve is installed in accordance with NFPA Pamphlet No. 30A, 1987 Edition, at each dispenser connected to an AST located at a service station.</p> <p>Verify that fill connections at service stations for tank vehicle unloading operations are located at least 25 ft from ASTs, dispensers, building, and property lines.</p> <p>Verify that a check valve, gate valve, and quick connector or a dry break valve are installed in the piping at a point where connection and disconnection is made for remote tank vehicle unloading.</p> <p>Verify that these devices are protected from tampering and physical damage.</p> <p>Verify that means are provided to prevent or contain spillage during fuel delivery operations.</p> <p>(NOTE: This requirement does not apply to horizontal tanks of 4000 gal or less and vertical tanks of 2000 gal or less.)</p>

COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT South Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS:
17-3. (continued)	<p>Verify that fill connections at service stations existing on 12 June 1990 are exempt from the fill connection distance requirement.</p> <p>Verify that unattended service station installations in accordance with NFPA Pamphlet No. 30A, 1987 Edition, have a card lock or key lock dispensing device.</p>
<p>17-4. The aboveground storage of flammable and combustible liquids must meet specific operational requirements (CLSC, 39-41-260 (C) and (K)).</p>	<p>Verify that the area inside the fence and diked area is at all times clear of trash, combustible storage, and vegetation.</p> <p>Verify that all ASTs located at service stations are clearly labeled with appropriate placards as to the contents of volume and are kept free of scale and painted.</p>
<p>17-5. Renovation and construction of a service station with ASTs requires approval (CLSC 39-41-260 (F)).</p>	<p>Verify that the renovation and construction of service stations that use ASTs to store flammable or combustible liquids, or both, are approved by the State Fire Marshall.</p>

INSTALLATION:	COMPLIANCE CATEGORY: HAZARDOUS MATERIALS MANAGEMENT South Carolina Supplement	DATE:	REVIEWER(S):
STATUS NA C RMA	REVIEWER COMMENTS:		